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Brent Kington, "Liberty '76," steel, 8' h, 1976

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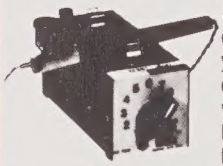

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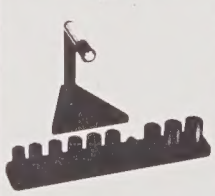

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REVIEWS

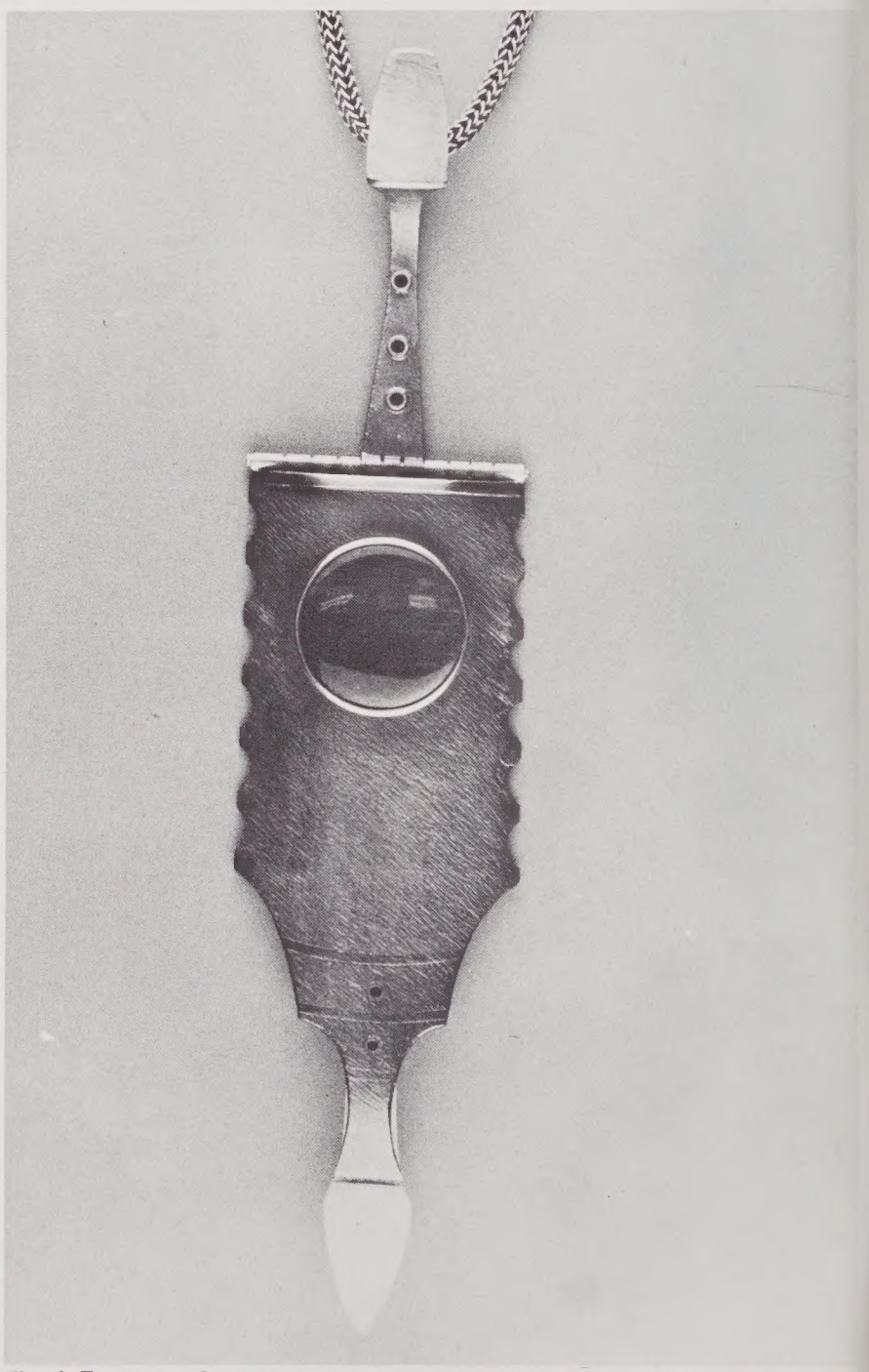
EXHIBITION REVIEWS

METALS/VIEWS
Dec. 2-Jan. 12, Craft Center, Worcester, Mass.

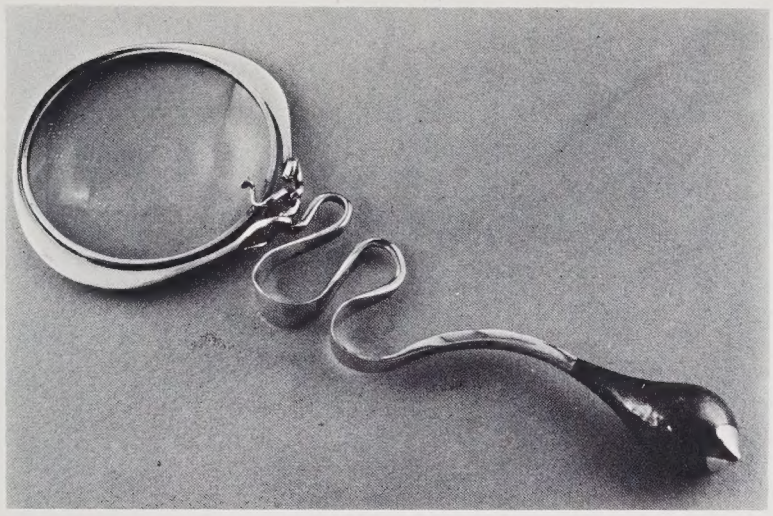
by Tim McCreight

The current exhibition at the Craft Center in Worcester, Mass., will help to resolve any doubts that metalworking can be a personal artistic endeavor. The show, METAL/VIEWS, is a national invitational featuring the works and thoughts of a dozen metalsmiths. On display at the Center from Dec. 2 through Jan. 12, the exhibit provides not only an insight into some talented individuals but a perspective on the several directions of metalworking today.

In addition to their work, each contributor is represented by a photo portrait and a written statement explaining each worker's goals, criteria, and working style. The excellent



Chuck Evans, pendant, copper, brass, sterling, pink gold, delrin and labradorite *(All photos by John Russell)*



John Fix, "Magnifying Glass," sterling, copper and gold, 8" long

work, the revealing statements, and the twelve smiling faces all work together to create a show that is personal and instructional as well as entertaining.

Participants were selected from across the country and come from both academia and the business world. Included in the show are: Falk Burger, Colorado; Chuck Evans, Iowa; John Fix, Maryland; Curtis LaFollette, Massachusetts; Davis LaPlantz, California; Nancy Moore/ Tom Streb, New York; Rodney Nakamoto, Rhode Island; Deborah Nore, Alaska; Harold O'Connor, Colorado; John Rotter, California; J. Fred Woell, Massachusetts.

The breadth of expression to be found in the craft today is evident in the fact that such a diverse show could be built on the work of only a dozen people. Within the 108 works that make up the exhibition a broad range of size, materials, and intent are explored.

Most of the objects are of a "human" dimension, from Moore and Streb's earrings to Chuck Evans' six inch pendants. There seems to be a general willingness to work within the limits of functional objects; bracelets are made to be worn, rings are of a practical design, etc. Most of the work is jewelry, but containers make a strong appearance. These range from Curtis LaFollette's graceful die-formed decanters and vessels to David LaPlantz' humorous coin bank. The show gives the impression that several of the contributors are teetering between functional and "pure art" objects. Fred Woell submitted several cast bronze statues mounted on small fabricated cubes that open to reveal a container. This raises the question of the role of the statue which could almost be seen as the handle of a small box. A wry work that pokes fun at the question of functionalism is a bolo tie by John Rotter in brass, copper, lead, nickel silver, wood, and marble. It is a well executed rodeo scene set in a heart-shaped frame. The humor is that the piece is 6½ inches high and weights about five pounds. The standard bolo finding and cord on the back make for a startling and whimsical effect.

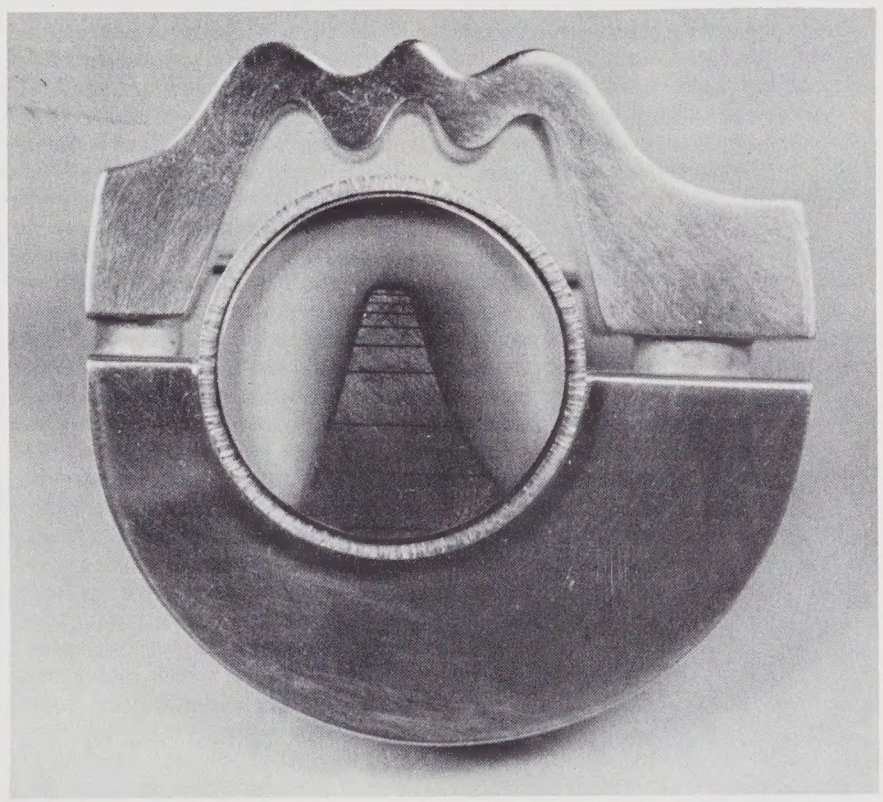
Some of the work shows a single-mindedness, while other cases point to an eclectic style. Falk Burger, for instance, is seen in a delicately proportioned gold and sterling ring set with a diamond and ruby, but also contributed a series of small non-functional objects which together are called *Victor's Coin Collection.* These appealing prototype coins from around the galaxy seem to take themselves as seriously as any of the other more commercial work and it is perhaps in that that their strength lies. John Fix, whose work ranges from goblets to bracelets and includes a table object, has developed a style built on constructed pods and forged tapers that seems to lend itself to any size or degree of function he chooses.

In style and technique, the show covers a range from primitive to space age forms. Harold O'Connor's intricate rings and pendants glisten with an elegant purity of design. Their preciousness makes an exciting counterpoint to the broken machine forms that serve as a root for this current work. Deborah Nore's use of copper, brass, and plexiglas, in contrast, has an almost brutal effect, despite its sophisticated handling. Nancy Moore and Tom Streb depend on the basic techniques of stamping, engraving, and riveting to create their rich multilayered jewelry. On the vanguard of technology, Rodney Nakamoto's machined container of anodized aluminum and similarly constructed electronic object would be at home on a *Star Wars* set. The latter, powered by a battery, activates at the touch of two fingers to send a red and yellow light bouncing around concentric circles. Altogether the show displays care, intelligence, wit, and craftsmanship. The metalworkers provide a proud sampling of their species: artist/crafters who know who they are, what they are doing, and why they are doing it.

In conjunction with the show, the Craft Center hosted a workshop on surface techniques with Harold O'Connor on Nov. 11 and 12. The workshop was originally scheduled for a single day but response was so large that a second section was made available on the following day. Almost 50 amateur and professional metalsmiths from four New England states participated. Both days passed too quickly, but all those present left with a wealth of information and an eagerness to put it to use.

METAL/VIEWS was supported in part by a grant from the Massachusetts Council on the Arts and Humanities. The poster/catalogue for the show was partially funded by donations from ARE, Inc., Allcraft, and Parker Metals. A slide package of representative works is being made available and can be ordered by contacting the show's coordinator, John Russell, Craft Center, 25 Sagamore Rd., Worcester, MA 01605.

Rod Nakamoto, brooch, sterling, cellulose acetate, garnet and tourmaline, 3"



Harold O'Connor conducting workshop in surface treatments at the Craft Center (Nov. 11 & 12, 1978) attended by 22 jewelers

HELEN DRUTT GALLERY
Nov. 8-Dec. 2, 1978

by William Daley

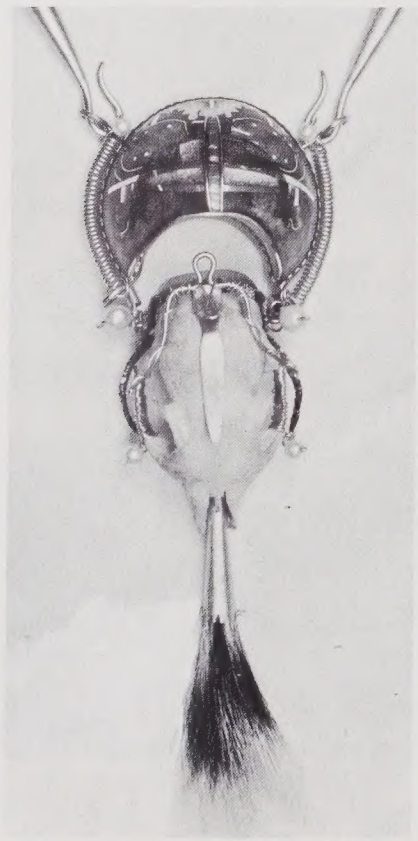
William Harper is a master draftsman and colorist. Using open gold cloisons and transparent enamels, he defines realms of exotic color which are at once delicate and assertive. These enamelled mappings with primary geometric boundaries are appendaged with shells, pearls and cast insect parts. Gold forged wires extend complexities by reiterating with space, boundaries, reefs and spines which are stated in the enamelled forms.

Exotic materials, disparate comparisons, and the persuasive use of scale, sustain a sense of delight and mystery.

William Harper's jewelry suggests talismans of joyous love or the esoteric mappings of remembered past journeys; intimate journeys to locations where the tentative and the absolute form a luminous opening.

These twenty brooches and necklaces are the consummate offerings of a singular spirit.

William Harper, "Pagan Mamu No. 2: Grey Spectre"



ARTIST CRAFTSMEN: AN IN-DEPTH LOOK

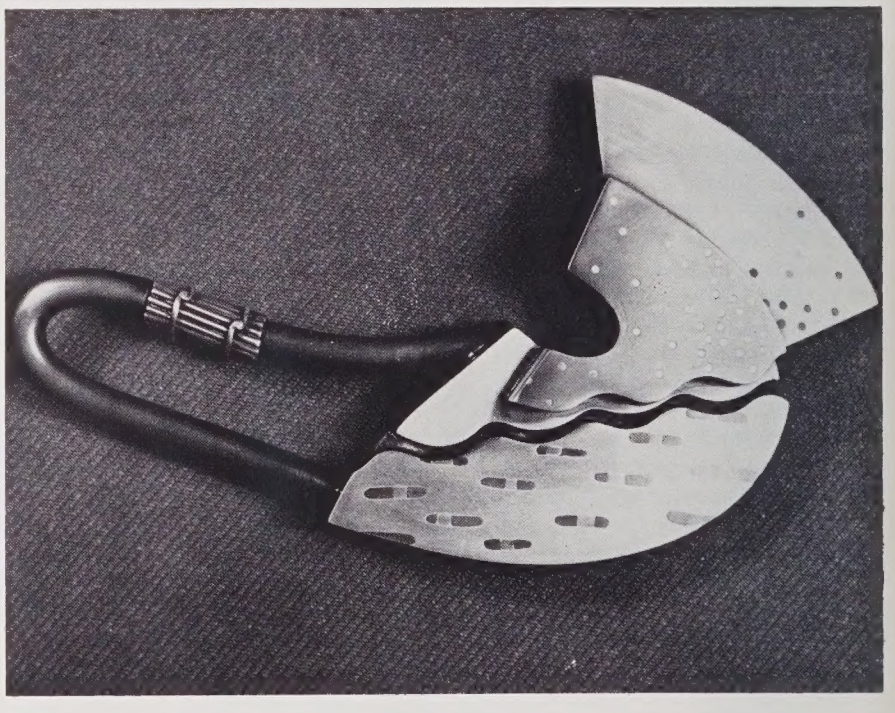
October 15/November 8, 1978
Cleveland Institute of Art

At no time since the onset of the industrial Revolution has there been so much activity in the field of handcrafts. Craftworkers are all about us busily engaged in making, selling, or buying something called crafts. Classes are available in every town and city to teach every sort of craft. Publishers mine bonanzas from the sale of countless "how-to-do-it" books. Craft fairs have grown into major markets for the sale of handwork.

Within the past year our own Cleveland Museum of Art has lent its prestige to honor the crafts in an unprecedented way, with major exhibitions of fiberworks, Japanese packaging and folk art, and Afro-American decorative art. One is hard-put to find a common denominator for such items as a carelessly stitched bedcover, a picture worked in gossamer-fine lace, and a sculpture made of industrially produced rope. Perhaps we may view this great range as a sign of the healthy life of the crafts in our time.

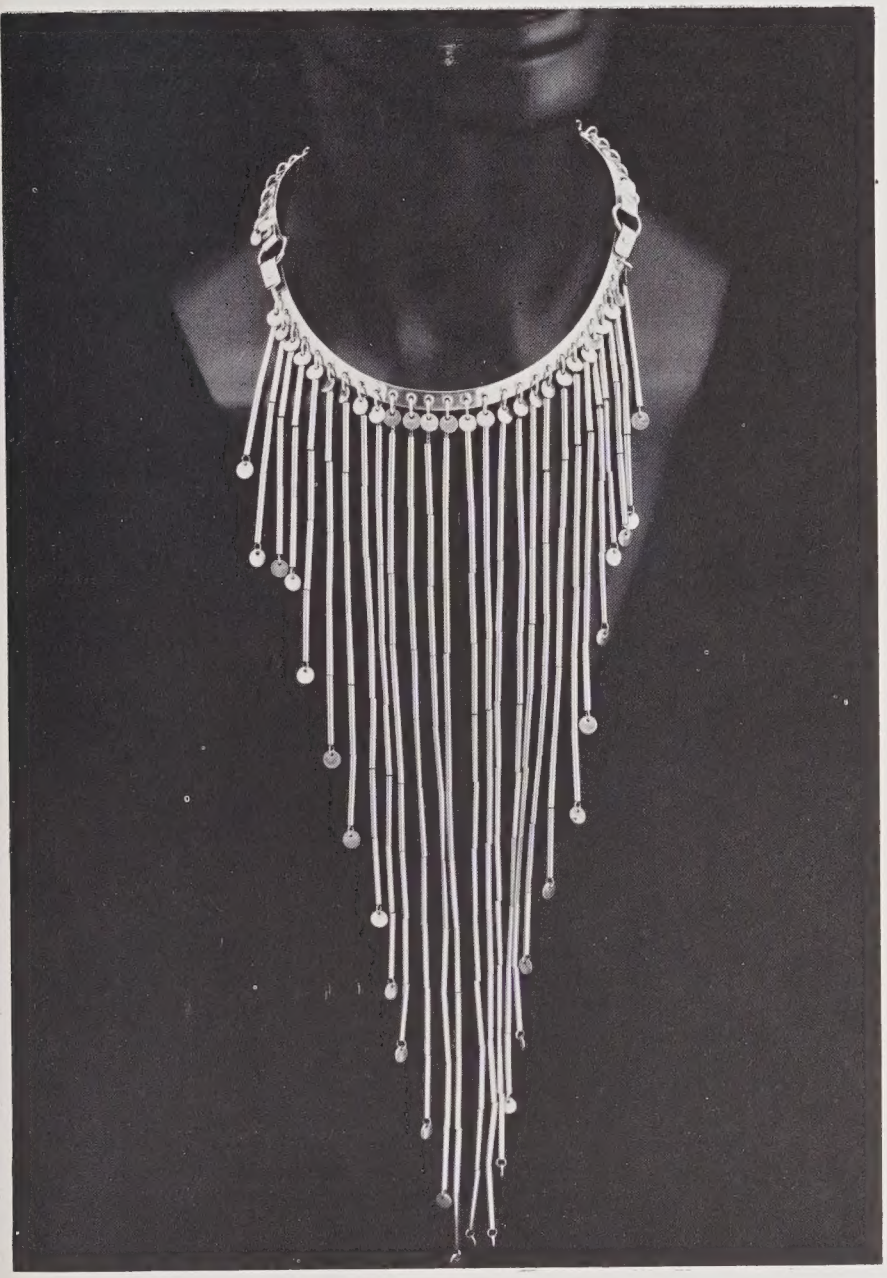
Elsewhere in the world, the governments of such nations as Japan, India, and Mexico, which still have flourishing folk-craft tradition, are taking action to preserve their heritage of artisan skills. Even in our own thoroughly industrialized country, a survey of the job market today surprised us by listing fine cabinetmaking side by side with the more predictable nursing and computer science. The long-awaited day prophesied by William Morris a century ago, when the skills of handcraft would be treasured by the world community seems to have arrived.

Indeed, in a world of growing shortages of virgin materials and energy, when the daily activities of all of us must be measured in terms of their impact on the earth's resources, fine crafts, which marry utility and art, may well come to be seen as the most socially responsible outlet for artistic expression. Such a world will certainly be furnished with fewer material objects, but those would delight us with their open expression of the skill, thought and fantasy of their makers. The present exhibition can serve us as an example of an environment which



Roberta Williamson, Brooch, sterling, copper and brass (top)

Kenneth Bates, "Unidentified Bloom" plique-a-jour enamel, 6"x8", 1978 (bottom)



displays the careful and loving use of materials. The craftsmaker, long considered an anachronism in the industrial world, may soon come to the fore as a leader toward our future.

Elizabeth Breckenridge, Craft Historian, Cleveland Institute of Art

(Editor's Note: Included in this exhibit were SNAG members: Kenneth Bates, Margaret Fischer, Mary Ann Scherr, Roberta Williamson, Pamela Pastoric, and Gretchen Foran.)

Mary Ann Scherr, 14k gold necklace

ANIMAL IMAGERY

by Kay Eddy

A madcap menagerie of beasts, birds and fish took center stage at The Elements Gallery for their holiday show of "Animal Imagery" which opened to the public on November 28. One was overwhelmed at the vast well-spring of creativity represented in this invitational exhibition by 50 American artists working in clay, glass, wood, gold, silver and enamels.

There were creatures peeping out of mugs, hanging from enameled pendants and embroidered neckpieces, worked in repousse on gold and silver, cast into rings, sculptured in clay, painted on porcelain, forged in steel and carved from wood.

"The Chicken Knows," a 24K cloisonne enamel pendant by Colette, was a Chagall-like dream landscape where chickens sail through the starry firmament on claw-footed bathtubs. Ellen Reiben's "Rabbacus" in sterling silver and onyx, was an amusing take-off on the abacus, with rabbit "counters." Jim Yesberger's rings in 14K gold or sterling were a whole alphabet of beasties cast in the lost wax process.

Felicia Liban's enameled animals were charming and her technique was impressive. A winged frog was a particularly lovely pendant on a hand-woven silver chain. "Fly Away With Me" pleaded a pelican from a palm tree roost in Pat Garrett's cutout silver landscape pendant.

There were pieces moderately priced for Christmas giving, pieces for collectors and some so irresistible that one was tempted to put them under their own tree.

Felicia Liban, cloisonne enamel, sterling with pearls

MULTI TECHNIQUES OF ENAMEL
An Educational Enamel Exhibition
UCSD Central Library, September 20-October 25, 1978

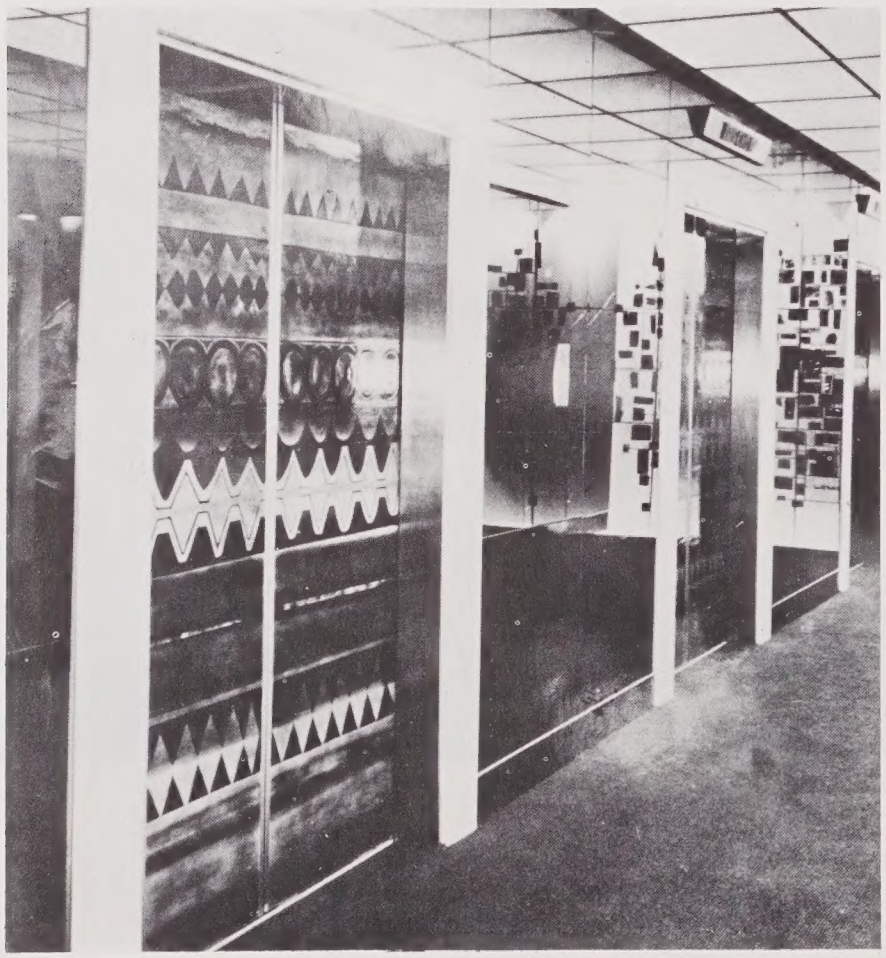
by Kay Whitcomb

Phyllis Wallen, basse-taille enamel on copper

The Multi Techniques of Enamel exhibition at UCSD Central Library was organized to correct the information about this medium. Enamel is a glass that is fired on specific metals at 1500 degrees F/800 C for minutes, depending on thickness of metal, perhaps from three to twenty firings. There were explanations of nine types of enamel, formulas, thirteen techniques, foreign words for this craft, terminology, vocabulary, explanation of processes, plus the potential of this craft through exhibitions. This includes the 2nd International Festival of Enamel, April-May 1980, with an exhibition, workshops, and conference.

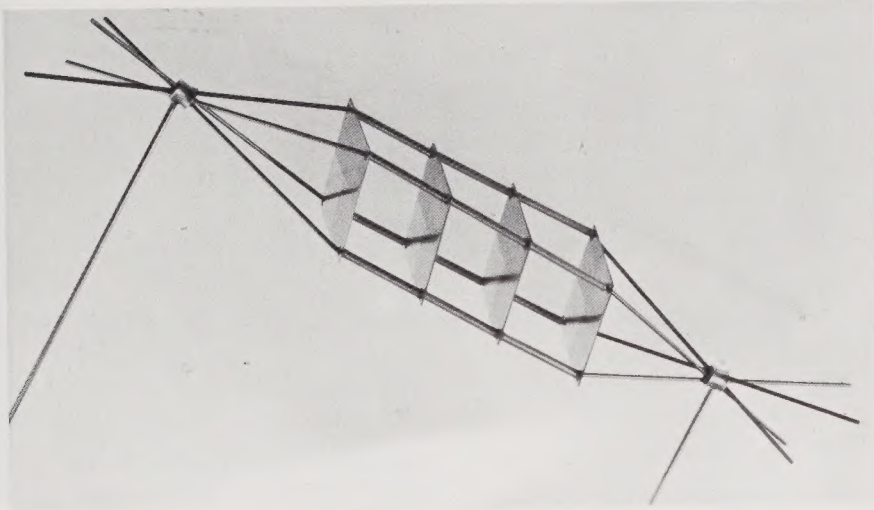
First rate examples of these techniques by international contemporary masters, plus historic illustrations of enamels were exhibited. Cloisonne was represented by Hiroaki Ohta, Japan; Fay Rooke, Canada; Colette, Coreen Kaufman, William Harper; plus Faberge and Lalique. Cloisonne, but not cloisonne metal, channel work was illustrated by the Tutankhamun treasures. Sylvia Falkove had exciting examples of the champleve techniques besides the falcon pendant by Kay Whitcomb and plaque from the Cluny Museum collection. Etching the copper, basse-taille style was shown by Phyllis Wallen and Jack Boyd. D. X. Ross and Francesc Vilasis, Spain; and Kay Whitcomb represented grisaille; Merry Renk's hair ornaments showed plique ajour; Jo-Ann Tanzer, photo imagery (silk screened); Jackson Woolley, Keichi Saito, repousse; electroform, Elizabeth Klim; the works of Hiroaki Ohta, Fay Rooke, William Harper, Saito, and Kay Whitcomb used paillons; sgrafitto and limoges techniques were used in Kay Whitcomb's examples; Vilasis also used limoges method. The symbol of the exhibition as poster was an antique Chinese crane: en ronde bosse with cloisonne (brass wires).

Architectural murals on copper: the Woolley mural at the Fresno Public Library, depicting the Dewey decimal system, was illustrated. Enamel on iron, representing early manufacturers, was the Kohler bath tubs — spanning 90 years. Actually hanging on the wall was Kay Whitcomb's 40x 60" enamel on steel panel "Imagination", showing a direction for this medium. Murals by Doris Hall, Gyorgy Kepes, Endre Nemes (Sweden) and Mira Jebwabnik's doors were included. Fifty slides are available with audio tape.



Elevator doors at Summit Hotel, NY, enamel on steel

Antique Chinese cloisonne, in ronde bosse



Vered Kaminsky, object, brass, copper, silver, steel and al-paka (left)

Shira Shohat, brooch, silver, brass, mokume, al-phaka (below)

BEZALEL ACADEMY EXHIBITION

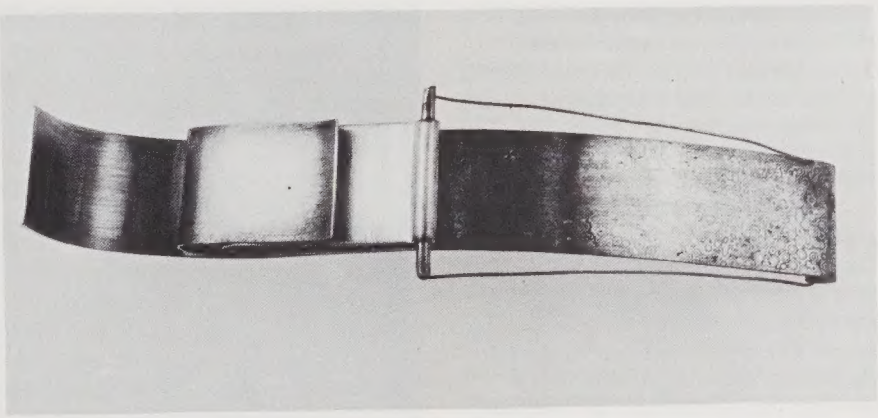
by Arie Ofir

The Bezalel Academy of Arts and Design is unique in Israel, and as the entire field of gold- and silvermithing is still in its infancy in this country, Bezalel is the only place in Israel in which people are involved in contemporary design in jewellery; its graduates are pioneers on the frontiers of the field.

Therefore, we have been obligated to forge an approach which matches the special circumstances of Israel and which also spans the distances between Israel and the wider artistic community. Israel enjoys certain special conditions which permit the enlistment of unusual cultural potential, such as the wide spectrum of nationalities represented by the student body, which gives rise to commensurately varied artistic influences. On the other hand, Israel also tends to suffer from isolation and distance from cultural foci such as Europe and the U.S.

Thus, in most instances, students can see jewellery only in catalogues, periodicals and books; they do not have the opportunity to view exhibits first-hand. Because of this problem, we try to maintain contact with people and institutions abroad. Dr. Fritz Falk serves as advisor to the department and contributes a great deal to the establishment of these ties, especially by visiting us nearly every year. Other guests who have visited our department include Barbara Cartlidge of London, Claus Bury of Hanau, West Germany, Prof. Stanley Lechtzin of Philadelphia, and Cornelia Rating of Karlsruhe, West Germany, along with Tony Laws and Pierre Degen who came as part of an exchange-teachers program with Middlesex Polytechnic, Hornsey School of Art, London.

The purpose of the department of gold- and silversmithing is to educate the student towards the end of his being an artist, a designer or both, with emphasis on the acquisition of values, judgment, visual and ideological insight, understanding and awareness of, and openess towards the general problems in art of our day, along with those specific to silversmithing. Technical adeptness is sought through experience and research both in technology and topics in gold- and silversmithing. The student is prepared for a profession in studio art or in industrial design.



Miri Feller, rings, brass and rubber

The curriculum divides the four-year program into two:

COURSE A—first and second year in which the student is to acquire basic skills in design and in execution.

COURSE B—third and fourth year in which the student can realize his own work and express his personal visions in a program of pluralistic guidance.

The curriculum is based on full integration of the teaching staff. All teachers including those in fields other than gold- and silversmithing, such as sculpture, drawing involved in the gold- and silversmithing projects of Course B.

In addition, the student has access to a program of academic studies, which has great value in learning to understand the processes of society and individuals.

Within the framework of the department are also a number of unusual, extra-mural activities, including special events and trips, for the widening of horizons, for the expansion of awareness and openness, and in order to experience a broader range of subjects.

Bezalel's approach to the teaching of jewellery is similar to the attitude of American schools. Therefore, it is fortunate for us to have the opportunity to display an exhibition of our students' work. This was made possible thanks to the initiative and help of Prof. Stanley Lechtzin and Prof. Arline Fisch who are hosting the exhibition in their universities: Temple University/Tyler School of Art/Philadelphia, and San Diego State University.

The exchange of ideas and attitudes is of tremendous importance to artists. Such an encounter is essential for the development of every artist and designer.

We hope that following this exhibition stronger contacts with different schools of jewellery will be established. There is room for exchanges by lecturers and students. The first contact of the Bezalel Jewellery Department with schools in the U.S. began on my last visit to the States in 1975, but we are certainly looking forward to a closer and more stimulating contact in the future.

Kay Whitcomb, "Goethe Quotation," 12"x13", copper enamel

FOURTH INTERNATIONAL BIENNALE – THE ART OF ENAMEL

Limoges, France, July-September 1978

by Kay Whitcomb

With international flags flying, representing the exhibiting enamelers outside a medieval chapel in Limoges, the 4th Biennale for the Art of Enamel opened July 12, with a special preview and luncheon for Mme. Valery Giscard D'Estaing, wife of the president of France (a sponsor of the exhibition), the press, special officials, and exhibiting artists. The attending craftsmen stood by their work and were introduced to Mme. Giscard D'Estaing. After a marvelous luncheon the artists were bussed to a second section of the Biennale at the Old Chapelle Notre-Dame, Saint-Junien. The evening festivities included a grand soiree at a country chateau which was highlighted by regional folk dancing in costume, performed to several orgues de Barbarai.

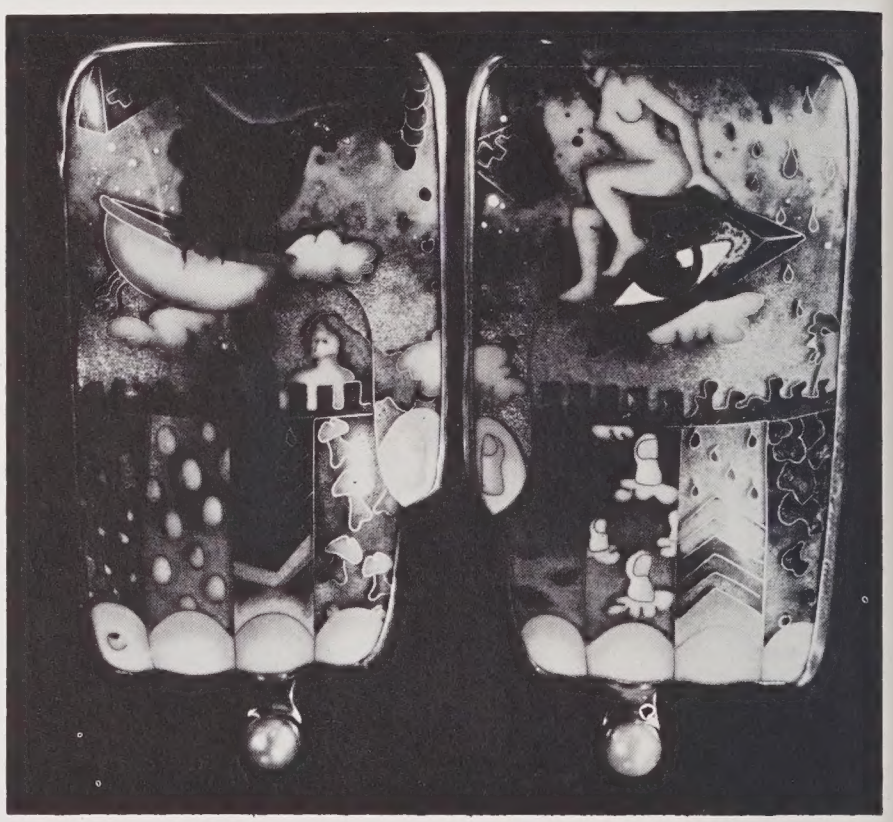
Throughout all France there were giant size posters, proclaiming the 1978 Fourth International Biennale for Art of Enamel. A beautiful all-color catalogue, using 38 illustrations at a minimum cost of $2, shows that this exhibition was well underwritten and forecasts the many directions as an art/craft medium. The renovation of the medieval chapel into a museum with a superb display created a unique atmosphere. Many of the craft techniques of enamel were represented as a jewel, an object, or mural, and this exhibition gives a marvelous cross section of the unlimited horizons on a world basis for this medium. Many show the roots of their origin and it was interesting to see the search for creative expression.

So many of the exhibits deserve comment for a show of this magnitude: 178 international artist/craftsmen, 18 countries, two galleries, 365 enamels. The French panel of the family on skate board vacation, using limoges technique, shows that Marietherese Masias relates to the interests of her students. Another cloisonne mural with six composites by Claude Michel related to the oil spill off Britany and the fishing industry. The charm of "Symbiosis," a cloisonne jewel made you dream of the Chagall fantasy, beautifully executed, colorful and surrealistic by Colette, prize of honor from the jury. The viewer becomes involved with the intrigues of communal living in the large panel (40"x100", 24 sections) limoges enamel by Georges Magadoux, president of the Biennales. Medal winner of the city of Limoges, Hiroaki Ohta, had a handsome, stoned, cloisonne, 12" high vase called "Old Blue City," truly a magnificent masterpiece.

With 37 Japanese enamelers exhibiting, the Buddha panel by Toshiko Tanaka has undercurrents of an intriguing culture which incorporates repousse and limoges technique. New to the English scene from Australia, Alexander Sadlo (who was first a painter) has an interesting "Profiles" panel. An exquisite portrait, using grisaille, repousse background was by top prize winner of the 3rd Biennale, Francesc Vilasis of Spain. One should really watch for the Vilasis brothers work, for Andrew's work has more depth. The panel incorporating the Goethe quotation uses limoges and sgrafitto technique, plus the chemical crust developed by that craftsman –Kay Whitcomb– won "Prix de Syndicat d'initiative." Both Colette and Whitcomb are from California and are members of Enamel Guild West, the latter being the 1st president and a founder of this Guild. Other prize winners were from France, Austria, Czechoslovakia, Hungary, and France. Other Americans exhibiting were June Schwarcz, Henry Cote, Coreen Kaufman and JoAnn Tanzer.

Limoges is a city in west central France, noted for enameling from the 12th century through the 17th, originating techniques of champleve, grisaille and limoges. It is also referred to as a center for the Art of Fire. There are several porcelain china factories located there, including Havelland. There are many enamel studios/galleries throughout the old section near the cathedral. In latter years the enamelers of this region were better known as copiers of other art forms into enamel. In 1971 a small group of original artist/enamelers organized the first International Invitational Biennale. M. Georges Magadoux has been the president of these Biennales.

In 1974, Kay Whitcomb visited Limoges, showed her work to M. Magadoux and was invited to their 3rd Biennale in 1975. It was startling to realize the French thought there was no enameling in the U.S.A.



Through national periodicals, she suggested the American enamelers send her slides which were viewed by Henry Gardiner, director of the San Diego Museum of Art, and Carol Wilcox; then the slides were sent to France with recommendations. Twenty-four Americans received invitations; William Harper and Hilda Krauss won medals of the city of Limoges. The interest for the Biennale had mushroomed beyond their expectations and physical capacities, which only he who has sponsored such an undertaking can possibly understand. With the interest shown for the Biennale, Kay Whitcomb asked the Laguana Beach Museum of Art for an International Exhibition for Enameling in 1976. Enamel Guild West was formed to sponsor this project, which included workshops. The Guild revealed a fantastic interest for enameling centered in Los Angeles and San Diego. The exhibition at Laguna Beach, which is halfway between these two cities, had an attendance record of the 2nd most popular exhibition ever held at that museum. Twenty-five enamelers came from Japan to the opening, so a panel discussion was put together. The cultural exchange that has grown between Japan and the U.S.A., etc., has been exciting . . . 1st International Shippo Exhibition 1978, Tokyo, and the invitation to exhibit at the Ueno Royal Museum, Tokyo in Nov; 2nd International Festival of Enamel, Laguna Beach, April/May, 1980. All enamel exhibitions are an opportunity to find new talent and upgrade the image.

Colette, "Symbiosis," 3"x2", cloisonne enamel

ENAMEL GUILD: WEST MEMBERSHIP SHOW, 1978

by Elsie Deitz

The Enamel Guild: West held a juried membership show at the Brand Library Art Gallery in Glendale, CA in December. This is the third show held by the organization since its inception in 1976.

Dr. Nik Krevitsky juried the show. His statement in the catalog deserves to be repeated here:

Since enameling as an art form concerns itself with the miracle of fusing bits of glass onto a metal surface under intense heat, much that occurs is unpredictable.

The artist's problem is to use this variable quality in combination with a sense of design and purpose which make a unique entity, a personal statement honest to the medium. No matter what specific technique (cloisonne, champleve, limoges, plique a jour, etc.) is used or combined, the artist has the obligation to take full advantage of its potential. To attempt to duplicate a work of another medium is folly. The artist must find a happy balance between technical proficiency and creative expression to create a personal work expressing the signature it bears.

In selecting work for exhibition, the juror first looks "at" . . . hoping a particular piece will stand out as a successful solution to a problem. Next one looks "for" . . . searching for qualities of color, design and technique, as well as total presentation of the work. Hopefully, this combination of ways of looking and evaluating make for a good show if the quality of submissions is high.

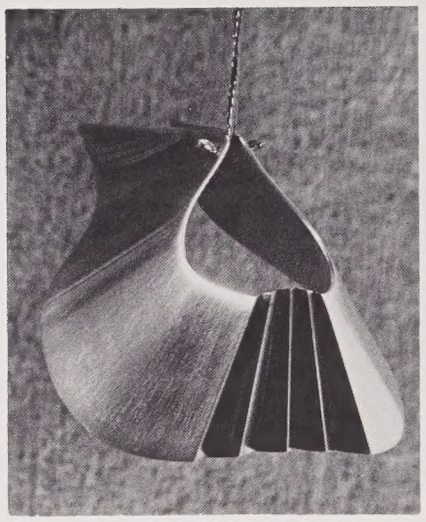
Almost 200 pieces were chosen for exhibition in the sky-lighted main gallery and foyer. Although the affiliated National Enamelists and Northern California groups were invited to participate, few submitted entries.

Work ranged from the conventional, time-honored expressions to the use of enamel in combination with newer man-made materials in collage, assemblage, and construction. A number of large panels used silk screening on steel. So much that was excellent, executed on a large scale, could be translated to the silver- and goldsmith's idiom with only a shift of emphasis. Both areas are predicated on the use of metal as a foundation.

Outstanding wall pieces included: Candyce Wagner's "View of the Grand Canyon"—three shapes of etched, textured, enameled copper, set in a black box, that had good depth with the feeling of an assemblage. Gary Conley's award winning "Alphabet No. 1"—a strong, monochromatic graphic statement, featured enameled letters on a rumpled metal ground within a rosy suede mat. A large etched copper armadillo stands guard over the whole. Graphics are also evident in Kay Whitcomb's "Kindred Tastes"—a word message of letter blocks. Melinda Matthews' "Evanescent" is a joyful blue and white four panel mixture of cotton and plastic different-textured clouds on identical enamel bases. Penelope Philpot's untitled large paneled piece has the quality of good watercolor, spontaneous and forceful. Spencer Bisby's "First Snow" portrays a scene of stark bare trees; patterns of oxidation represent bark formations. His "Spring on the North Coast" with its fresh greens, primitive divisions of space, has great charm. In his "Desert Spring" and "Lily Rock" Ken Brown's black and white line drawings are completed, placed in juxtaposition with superimposed enamel panels using stencils, dry enamels and Fine Line Black for details. Duval Eliot's figure "Repose" is done in sgraffito line against a powerful, layered background. Christina Gibson-Sears' "Sisters" has good graphic detail and movement; a well-mounted, subtle piece. Pamela Harlow's prize-winning "True Coordinates of Death" includes graphic forms well delineated with the use of cloisons and gentle shading; lovely line and color float in space. Jessie Clark Daniels' "China Seas" and Mary Takeda's "Emanons" were good examples of well-stoned panels, carefully framed. In "Girl Behind the Gate", Lisa Mayer used wires independent of the enamel design for the gate scroll. This black and white grisaille technique also used some repousse for a three-dimensional effect. Carol Rieth's "Untitled No. 1" is a large work with graphic and pictorial message in ambitious cloisonne technique. Sherry Schrut's "American Purse Series No. 1" is a collage of warmth and dramatic color mounted on leather with a liberal use of copper foil and good range of texture. "Past to Present" by Phyllis Wallen shows careful attention to detail with crisp, linear etching. Carol B. Wells' "Cathy in the Sun" is an example of powerful use of color and etching. James A. Parker, Jr.'s "Greens" is a direct statement in a vertical panel of spring color highlighted by texture.

Small pieces and jewelry were contained in large glass display cases, positioned against a wall so that it was virtually impossible to inspect the reverse side. This was especially frustrating with jewelry, such as John Hamel's champleve and cloisonne pieces, in which fine craftsmanship was combined with bold and direct statements in flower forms. Linda Allen's "Sheep" and "Takigawa of Ogiya" were beautifully executed enamel round pendants requiring nothing more distracting than the simple bezels surrounding them. Her "Puffin: Mirrored"—a double fish design, played ivory against enamel, some over textured foil. Silver is layered, culminating finally in enamel; an invitation to search and find detail in color and form. Jo Ann O. Anderson's "Mermaid" round silver box, enameled top and sides, is a well articulated cloisonne that resolves the difficulty of enameling a vertical wall. Patricia Caulfield's "Ode to Leda and the Swan" used enamel portraiture with sterling silver, crystal and pearls. It is a well thought out, successful amalgam of media. A silver candy box with pierced doily base, ribbon and beautifully shaded cloisonne figure study on top is the work of Lorna Dawson. She also exhibited a triptych, "Marilyn Monroe Calendar" with wood paneling, cloisonne calendar figure. Loaded with detail such as the cast hand that clasps a set stone as the closure. Both pieces express a powerful sense of design and good color. Gim Fong's plique a jour bowl — a technique most people do not attempt, for good reason — showed a fluted interior created by using a copper toilet float as the base for construction of the plique a jour. Toni DeVenney presented two entries, "Pegasus" and "Hearlding Kukulcan"; enameling and forming of both were meticulous and well defined. Sylvia Falkove's "Butterfly" is a strong and colorful pendant. The relationship between metal and enamel is a happy one. An agate offset between the enameled wings has an organic relationship to the whole. The hammered sterling neckpiece is just right. So many times great care is taken to execute a very special pendant and then it is hung from a commercial chain that is either too weak or in competition with the work. Arlene Fisher's "Mother and Child" is an example of successful job of enhancing the work with the framing. A white wood oval (with touches of gold bleeding through) encloses an inner bezel frame of silver. The figures are done in skin tones. Correen Kaufman's "Satyricon" — repoussed rectangle covered with transparent enamel — pendant with neckpiece, had nice proportion and was also a complete statement. Nancy Monkman's cast sterling pin is a pleasing contrast of linear verticals and cloud-like blue and green enameled saucer shapes. Sterling was used successfully rather than the usual fine silver; fire scale was avoided by building up layers of fine silver by annealing and pickling several times before enameling. Alcina Nolley's green on green ring matched vertical enamel plique a jour discs to compliment an oval jade cabochon set horizontally above the enamel, making a strong, direct statement.

Membership exhibitions generate a wide range of work, from part-time craftspersons' painstaking efforts to the fully committed Master's candidate whose only thoughts and responsibilities are centered on producing those few, special works. At the other end of the spectrum is the working craftsperson whose time is mainly devoted to the business of earning a living. This combination has produced a show that is exciting, but somewhat uneven. There is a great deal here to be applied to the goldsmith's craft.



Rachelle Thiewes, "Christmas Ornament," sterling & brass, 4" –photo by Nancy Adam/Peter Hundley (right)

Jan Brooks Loyd, "Christmas Packages," sterling & copper, 3" (far right)

FANTASIA OF CHRISTMAS ORNAMENTS

by Armida Gonzalez

Christmas ornaments by metalsmiths — from the functional to the decorative, from a traditional star of silver to a contemporary top of tree ornament of acrylic and delrin — make up the current exhibit at Tiara's Metalsmith Gallery, El Paso, TX. This metal invitational includes 75 works by metalsmiths offering an interesting variety of techniques, styles, and artistic approaches to the media.

Marlene Byer's (FL) four small pieces using electroforming and enameling are a departure in scale from her usual work. The mechanics of her work, growth on copper foil matrix, are a substantial part of the design along with translucent bands of red and yellow enamels. The oxidation adds to the somberness of these pieces.

Next to Byer's work and in opposition to its feeling is the work of Aleris Geiger Zeitler (CA), bold and "sassy" brass shapes. The highly reflective forms, measuring 3" to 4" are given added impact with the use of bright cording, lightly wound with gold and silver thread, forming decorative and hanging devices.

Laura Pearlman's (OH) enamel plaques seem less like Christmas ornaments and more like artworks displaying her skill with cloisonne work on curved surfaces.

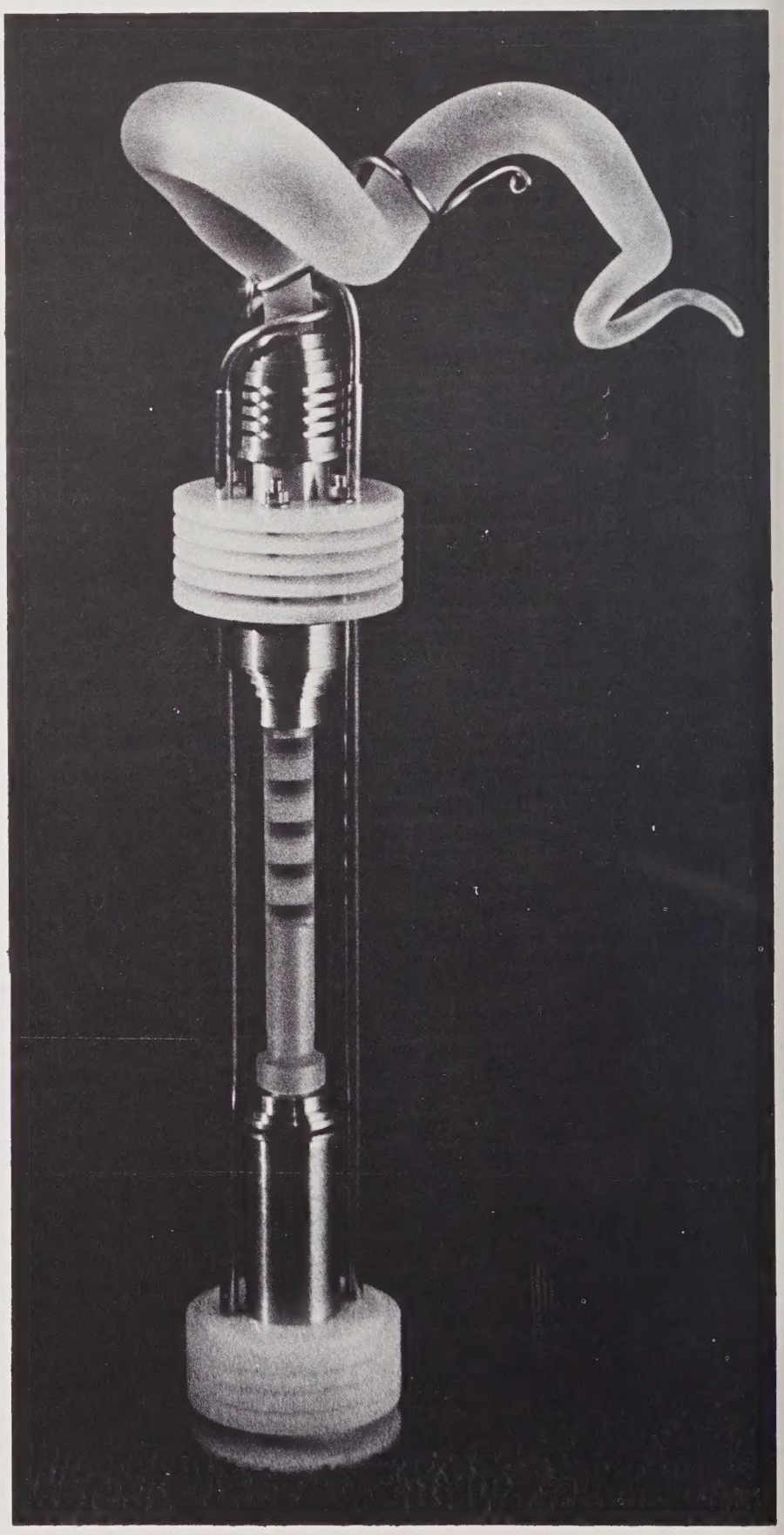
Rachelle Thiewes (TX), an exceptional craftsperson, is represented by four fabricated ornaments elegant and graceful in their simplicity and meticulous technique. Her use of bronze, brass and silver combines buff finished surfaces with areas of high polish which accent the sensuous curves of the forms.

Jan Brooks Loyd (NC) combines function with humor in her "Christmas Packages." She utilizes rolled surface texture on silver and silver inlay on copper and brass. The metal sheets are formed into 1" square "gift" packages complete with metal ribbons, bows and in some instances a card. Tapered silver hooks from which the miniatures hang provide a pleasing completion.

Sandra Parmer Zilker (TX) exhibited 2" stars sawed from silver sheet with etched decorative surface; three 4" blue acrylic icicles capped on one end for hanging with copper, brass & silver; 5" icicles of small silver strips with a variety of surface treatments formed into short tubes asymmetrically stacked and soldered intersected by various sized silver discs all tapering to a cool purple acrylic tip.

The single top of the tree ornament was David Keen's (TX) — an 8" tightly precisioned piece of machined bronze, delrin and acrylic ending in an undulating amorphic element of intertwining acrylic and brass. A sculpture that demands to be seen all year long as it prepares for a "top" yearly performance.

Advance U.T. El Paso metal students make up the remainder of the show. Trudy Berman's minature die-formed bell-like shapes with subtle patinas; Susan Berg's painted acetate between pierced matching brass elements funtionally and decoratively stitched together with silk thread; Karla Frausto-Jo Reese in a collaboration of pierced marriage of metals with textiles; Joan Dickerson's delicate pierced traditional Christmas scenes on copper and silver; Janis Johnson's use of wood, repousse and bright patinas on copper; Pam Lawson's die-formed pieces art deco in design combined with piercing and satin fabric; Marie Monteros combining natural shell forms with lyrical forged metal elements; Beverly Penn's forged sculptural forms hypnotically turning and twisting; Joyce Payne's use of spiculum forms with wood, clay and patinas on metal.



David Keens, "Tree Ornament (for the top)," bronze, brass, acrylic, delrin, 8" –photo by Nancy Adam/Peter Hundley

ROBERT LEIS, ENAMELIST
VALERIE DUBAC, GOLDSMITH
"About Faces—Characters in Cloisonne", Oct. 21-Nov. 26, 1978

by Antonia Schwed

The works of Robert Leis, enamelist, and Valeris Dubac, goldsmith—about 130 in all—make up a stunning exhibit at the Spring Street Enamels Gallery of Soho (171 Spring St., Soho, NY).

Leis' enamels are done in cloisonne and they are skillful, colorful, and dramatic. He has mostly used the human female face as his source of design and formulated it into humorous satire. I must confess that for me these numerous satrical concepts of the pretty, bland woman or the Mother of Claudius and/or Wicked-Witch begin to pall a bit in spite of the glowing colors and masterful craftsmanship. I would like to see Mr. Leis turn his artistic talents to perhaps more male faces (the very few he has done are so good) or to some more of his droll animals — there is a great cat pendant. I think there is somehow more feeling in these pieces. At any rate, of the satirical pieces I most enjoyed his handsome lucite-mounted picture called "Queen to Bishop to Pawn." In this you can notice one of his splendid and unusual techniques of using as decoration tiny silver discs set into the enamel. There is a stunning box top of a Japanese-type lady (a satire? I don't know, but I took it straight) and a pendant with an old fashioned cameo-like profile which is a beauty and quite different, I felt, from the other satire stereotypes. And what a setting Ms. Dubac has made for this! Which brings me to the wonderful work of Valerie Dubac.

Her art is absolutely marvelous. Her craftsmanship is impeccable and her work shines with feeling and creativity; her artifacts live. There is a lustrous silver, pearl and coral leaf necklace, a freshwater pearl necklace with exquisite clasp; there are tiny stickpins depicting authentic flowers. There is a rich necklace of uncut garnet and tourmalines with a completely right gold centerpiece that goes perfectly with the stones. The settings Ms. Dubac has created for Robert Leis' enamels are magnificient: pendant backs that are simply beautiful, so that the piece may be worn front or back (some even set with tiny precious stones). There are also deceptively simple-looking bezels that seem to flow around the pieces like rivers of metal. In some pendants, Ms. Dubac has set gems right into the enamel, a real Faberge-like technique.

All in all, an exciting show — not to be missed.

Robert Leis & Valerie Dubac, (front) reversible pendant, cloisonne (bottom left)

Robert Leis & Valerie Dubac, (back) reversible pendant, gold with rubies (bottom right)

BOOK REVIEWS

THE TECHNIQUE OF JEWELLERY

Rod Edwards, B.T. Batsford Ltd., London, 1977, 1978; $17.50

by Florence Resnikoff, reviewer

When I was in London in May of 1978, I tried to buy a copy of this book and was told that the entire edition had been sold out — mostly because it was being used as a text in British jewellery classes. That speaks well for the practical use of it.

After a chance to study it, I agree to its value as a text. It covers areas in detail which are not generally covered in depth in our American counterparts. There is very good technical information and detailed drawings related to making jewelry findings such as box snaps, hinges, catches and boxes. Good ideas for improvising tools and techniques as well, of course, as the basic information one would expect to find in a book of this kind.

Herbert Maryon's 72 designs for twisted wires are reproduced with the additional contribution of schematics indicating which wires had been used and which direction twisted to arrive at the samples.

Hundreds of interesting drawings of historical examples of jewelry and metalsmithing are presented in the side margins plus many line drawings illustrating many techniques. There are twelve color photographs.

Those are the pluses. The minuses are: a weak presentation on "The Properties of Metal," a basic misunderstanding of how fusing differs from reticulation, a dependence on illustrating the book with photos of slick, commercial style precious gem jewelry with no mention nor example of the innovative work being done today in this country and in others, and an inadequate coverage of electroplating and electroforming. For instance, he deals with electroforming as a means of reproducing work, plating on the surfaces of molds, and ignores the well explored area of the creation of objects in non-metal materials which are then created in metal by plating. He gives formulae for cyanide solutions, ignoring the safer, cheaper, acid-copper solution for electroforming. He touches too lightly on the safety factors and health hazards involved.

The bottom line is — a good book for many levels of metalsmiths.

1979 CRAFTWORKER'S MARKET

Edited by Lynne Lapin, published by Writer's Digest Books, Cincinnati, OH, price $10.95

by Chuck Evans, reviewer

An excellent source for many aspects regarding the marketing of craft objects. Certainly the most thorough book I've read pertaining specifically to crafts. Regardless of ones involvement, beginner to professional, *Craftworker's Market* has something to offer. A sample of the points covered: today's market, copyright and patents, packing work, photography, promotion, writing, agents, gallery and show lists, is just the tip of the 605-page iceberg. The editor has put great effort into presenting sound usable information and in the case of galleries and shows, she gives a profile of their price ranges, promotional efforts, acceptable work, heaviest buying times, etc.

I've asked the Journal to print the book's table of contents.

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1979 CRAFTWORKER'S MARKET

by Marcia Lewis, reviewer

This is a good resource book for any student or professional artist trying to make a living at his craft.

My criticism is that it will be out of date in a year's time, so it should be in paperback for half the price.

REVIEWER'S NOTE: Having the opportunity to review books for the Journal places me in a unique position. Books are normally sent to me well ahead of the Journal's printing date which allows me several readings of each book and time to take a good look and to think about what is being printed and offered for sale. Most book buyers are not in this unique position; most don't have time or opportunity to examine what is offered and for the most part will take a quick look, maybe are impressed by size or photographs and will spend their money. I would like to encourage our members to make every effort to spend time, examine what is offered and if satisfied, then buy. Before a purchase, check in public libraries, university libraries and in some instances ask the publisher for an examination copy.

I'm sure the Journal would appreciate your observations and comments on reviews and in all honesty to the authors and publishers, if you like, please offer a counter-review. A multi-view approach could stimulate a more beneficial dialogue.

—by Chuck Evans

GEMS TO EXCITE YOUR IMAGINATION!!

I search the world over to find YOU the finest gems to fit with your own original jewelry designs!! Specializing in the beautiful, the exotic & rare in cabachons, faceted stones & crystals! Please write today for your free wholesale pricelist!! Memo selections for jewelry classes, too!!
Raymond Gabriel, Dept. GJ, 1469 Rosena Ave., Madison, OH 44057

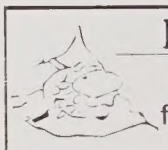
FORM EMPHASIS FOR METALSMITHS, Heikki Seppa, Kent Press, $9.50

by Chuck Evans, reviewer

Anyone having put down their smithing hammers, myself included, will be inspired by Heikki Seppa's new book. Practicing smiths may be re-energized. Seppa offers frank, fresh thoughts on the old approaches. Probably more significant is his pioneering a new vocabulary for the artist to relate those previously undefinable 3-D forms we wished to create. Illustrations and technical explanations he gives offer a new world of hollow form possibilities.

Rather than attempting to draw out every page and detail with inadequate words, I'll simply say that immediately after a quick skim of the book, I felt—for the first time in years—like grabbing a sheet of metal and beating the hell out of it! The book covers practically every phase of hollow construction. On a scale of 1 to 10, I give FORM EMPHASIS 9½. Higher if the photos of finished pieces had been photographed properly.

In this age of high power, high price, glossy picture, how to, books that seldom offer anything new, FORM EMPHASIS is an exceptionally good deal. Your money will be well spent, your heart will again thump and your hammer will jump.



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Write: Harold O'Connor, Box 213, Lake City, Colo. 81235

TECHNICAL INFORMATION

TRADE NAME SILVER SOLDERS AND SILVER BRAZING ALLOYS CONTAINING CADMIUM

The need for data on trade name silver solders and silver brazing alloys containing cadmium arose in 1966 because of reported deaths of individuals engaged in silver soldering or brazing operations that involved cadmium. Not all silver solders and silver brazing alloys contain cadmium, but a great many of them do. The cadmium is added to reduce the melting point of the alloy thereby making it easier to work. Low-melting silver solders and brazing alloys almost invariably contain relatively high amounts of cadmium. The American Welding Society (AWS) and the American Society For Testing and Materials (ASTM) have jointly classified silver brazing alloys according to their composition. The cadmium composition for BAg-1, BAg-1a, BAg-2, and BAg-3 classification are given:

(The first item in each line is the AWS-ASTM Classification, the second is percent of silver, the third is percent of cadmium, and the last is the brazing temperature range in degrees F.)

BAg-1, 44-56, 23-25, 1145-1400
BAg-1A, 49-51, 17-19, 1175-1400
BAg-2, 34-36, 17-19, 1295-1550
BAg-3, 49-51, 15-17, 1270-1500

Other classifications, BAg-4 to BAg-11 contain no cadmium and the silver ranges from 44-46 to 74-76 percent. In addition to the above, there is one special low-melt solder (740 degrees F for the liquidus) containing 5 percent silver and 95 percent cadmium.

The following is a list of some trade name silver solders or silver brazing alloys that contain cadmium. Several references on cadmium hazards are included.

TRADE NAME	CADMIUM %
(All State Welding Alloys Co., P.O. Box 350, White Plains, NY 10602)	
No. 37	19
No. 101	24
No. 105	95
No. 107	78
No. 111	24
No. 120	5
No. 509	82.5
(Airco Welding Products Division, Air Reduction Co., P.O. Box 281, Union, NJ 07083)	
Aircosil 3	16
Aircosil 35	18
Aircosil 50	18
Aircosil C	5
(American Smelting & Refining Co., 150 St. Charles St., Newark, NJ 07101)	
ASARCO Alloy No. 35	18
ASARCO Alloy No. 41	24
ASARCO Alloy No. 45	24
ASARCO Alloy No. 50	18
ASARCO Alloy No. 350	16
(Aufhauser Brothers Corp., 39 W. Mall, Plainview, NY 11803)	
Aufhauser Flux-Coated Silveralloy 45FC	24
Aufhauser Silveralloy 35FC	18
(Handy & Harman Brazing Products, 850 Third Ave., N.Y., NY 10022)	
Braze 440	15
Braze 506	7
Braze ATT	5
(Westinghouse Electric Corp., P.O. Box 132, Montevallo, AL 35115)	
Co-Silver 5C	95
Co-Silver 20C	5
Co-Silver 31C	19
Co-Silver 35C	18
Co-Silver 45C	24
Co-Silver 50C	18
Co-Silver 50N	16
(Sears, Roebuck & Co., Chicago, IL)	
Craftsman Silver Solder Kit 2032, Silver Solder Wire 1175	24
(Handy & Harman Brazing Products, 850 Third Ave., N.Y., NY 10022)	
Easy-Flo	18
Easy-Flo 3	16
Easy-Flo 35	18
Easy-Flo 45	24
(Eutectic Welding Alloys Corp., 40-40 - 172nd St., Flushing, NY 11358)	
Eutecrod 155	95
Eutecrod 181	5
Eutecrod 1030FC	23
Eutecrod 1400	17
Eutecrod 1600	5
Eutecrod 1603	24
Eutecrod 1604	17
Eutecrod 1700	23
Eutecrod 1702	16
Eutecrod 1801	7
Eutecrod 1801FED	18
Eutecrod 1801 Super	27
Eutecrod 1802	20
Eutecrod 1810	20
Eutecrod 1909	60
Flotectic Silver	18
(Goldsmith Brothers, Division of National Lead, 900 W. 18th St., Chicago, IL 60608)	
G.B. 20	5
G.B. 31	19
G.B. 35	18
G.B. 41	24
G. B. 45	24
G.B. 50	18
G.B. 95	95
G.B. 150	10
G.B. 350	16
(Hoover Strong Co., 119 W. Tupper St., Buffalo, NY)	
Hoover Silver Solder 301	36
(Leach & Garner Co., Attleboro, MA)	
L&G No. 22	10
L&G No. 36	5
L&G No. 50	19
L&G No. 52	15
L&G No. 68	27
L&G No. 76	16
L&G No. 82	24
L&G No. 96	18
(Marquette Corp., 5075 Wayzata Blvd, Minneapolis, MN 55416)	
Marquette 1050	18
Marquette 1150	10
Marquette 1175	24
Marquette 1205	78.4
Marquette 1205X	95
Marquette 1320	5
Marquette 1331	19
Marquette 1335	18
Marquette 1341	24
Marquette 1350	16
(Allweld Equipment Corp., 2471 E. Slauson Ave., Huntington, CA 90256)	
Morris P. Kirk Silver Solders,	
No. 35	18
No. 45	24
No. 50	18
No.350	16
(United Wire & Supply Co., 1497 Elmwood Ave., Providence, RI 02907)	
Sil 5C	95
Sil 5CZ	78.4
Sil 20C	5
Sil Bond 31	19
Sil Bond 35	18
Sil Bond 45	24
Sil Bond 50	18
Sil Bond 50N	16
(Englehard Industry, Inc., American Platinum Silver Div., 231 New Jersey Railroad Ave., Newark, NJ)	
Silvaloy 20	5
Silvaloy 35	18
Silvaloy 45	24
Silvaloy 50	18
Silvaloy 377	95
Silvaloy 1-401	78.4
Silvaloy 503	16
(Handy & Harman Brazing Products, 850 Third Ave., N.Y., NY 10022)	
TEC	95
TEC 4	78.4
TEC Z	78.4
Trimet 258	16
(T.E. Conklin Brass & Copper Co., Inc., 113-115 Leonard St., N.Y., NY 10013)	
Unibraze 31	19
Unibraze 35	18
Unibraze 45	24
Unibraze 50	18
Unibraze 350	16
(Fusion Inc., 4658 E. 355th St., Willoughby, OH)	
Silver Solders	
No. 1000	24
No. 1050	18
No. 1100	18
No. 1200	16
(Special Chemical Corp., 100 S. Water St., Ossining, NY)	
Speksolder 1145	24
Speksolder 1175A	18
Speksolder 1175B	27
Speksolder 1270	16
Speksolder 1295	18
Speksolder 1500A	5
(J.W. Harris Co., 433 W. 9th St., Cincinnati, OH 45202)	
Stay-Silv 35	18
Stay-Silv 45	24
Stay-Silv 50	18
Stay-Silv 50N	16

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THE COLORATION OF REFRACTORY METALS

by James Brent Ward

James Brent Ward, Tantalum Bowl

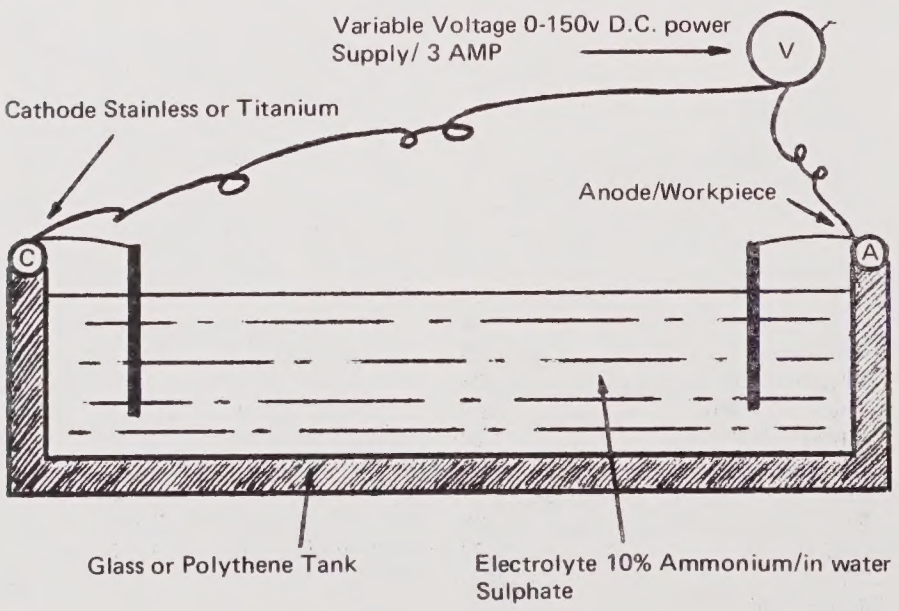
For the past six years all my investigations into the realms of jewelry, metalsmithing, and sculpture, have involved the use of refractory metals, such as Titanium, Tantalum, and Columbium. These metals all have the propensity to be colored by anode/cathode electrolysis, ie, by passing an electric current through them. A wide range of hues can be achieved, and with the exception of primary red, all spectral colors will be seen. The intensity of tone, however, is almost entirely dependent on the quality of surface finish prior to "anodising."

To achieve predictable control over the coloring of these metals, electricity is the essential tool employed, though colors can be achieved by oxidising the metal in air with a flame. For more sensitive deductions, a variable voltage power supply should be used, the machine must give a controlable D.C. voltage output of 0-150 v (sensitive to 1 volt units) and be run from mains electricity stabilised with suitable chokes and transformers.

In use the workpiece is connected to the anode of a normal electrolysis tank made of a suitably inert material such as plastic or glass, whilst the cathode of the output must be firmly connected to a bar or strip of stainless steel or titanium (platinum can be used, but is rather expensive — for my own work, I use a platinised titanium mesh).

Once firm connections have been established and the power supply energized, the variac control should be steadily increased in units of one volt. As this increase occurs, effervescence from the cathode will be seen together with a gradual change in the color of the workpiece and the sequence is predictable — from amber to brown, to purple, to royal blue, to grey, to yellow, to orange, to pink, to irredescent blue, to green.

Alteration in the colors relates exactly to changes in the voltage. As the volts increase the natural oxide thickens and appears, by refraction and reflection of light, to be different colors. It must be stressed that unlike aluminium anodising, there is no pigmented color and the tones seen depend on the ratio between whole wavelengths of light and oxide thickness. From my own work point of view, this is the essential magic of these metals because as the oxide thickness varies, subtle tones of color can be harmoniously joined creating patterns rigidly geometric or flowing and soft. By following a logically programmed procedure, accurate control over the colors is achieved. One must have a fundamental respect for the use of electricity— rubber gloves should always be worn, and care must be taken that exposed parts of the body do not come into contact with live electrical connections. (Electric shock is not aesthetically encouraging.)

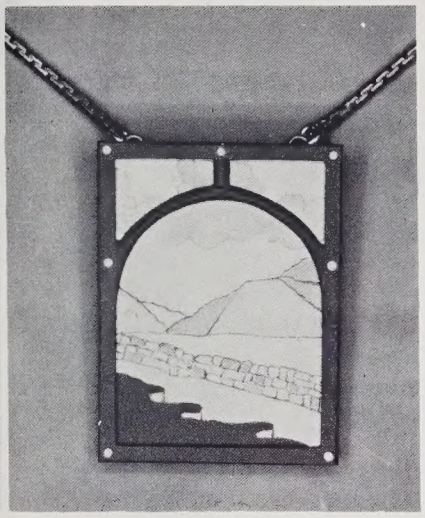


An alternative to directly immersing the workpiece, is to swab the surface of the metal with electrolyte, and then "paint" the colors on with an electrically charged suitable applicator. For most purposes a normal paint brush can be used provided it has a metal "ferrule". Again the workpiece is the anode, and the cathode wire is firmly clamped to the metal part of the paintbrush. Once the circuit is energised and the voltage increased, colors can be "painted" onto the metal with the same degree of sensitivity as water color can on a piece of paper.

Similar to immersion, the color range is from 0-120 volts, wherein after the tone of color becomes muddy and undefined. At voltages higher than 50, the brush must be frequently recharged with electolyte to prevent the hairs burning as the solution vaporizes. Again, rubber gloves must be used for holding the applicator and care should be taken not to touch the metal part of the brush to the workpiece (this not only blows fuses, but could ultimately damage the machine).

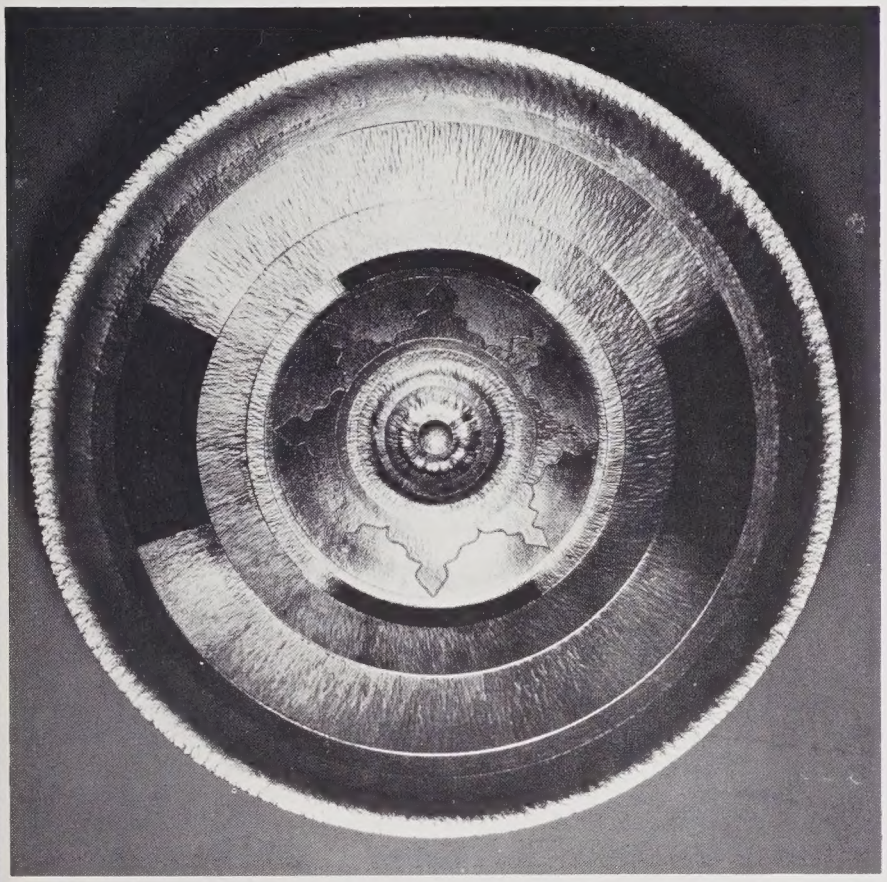
There are three main ways of achieving color on refractory metals: by immersing the whole of the workpiece (this is most significant when large areas of metal are to be colored); by localized anodizing, using a paintbrush to achieve blended flowing colors; and by direct heating in air which can achieve exciting effects by careful manipulation of a microwelder.

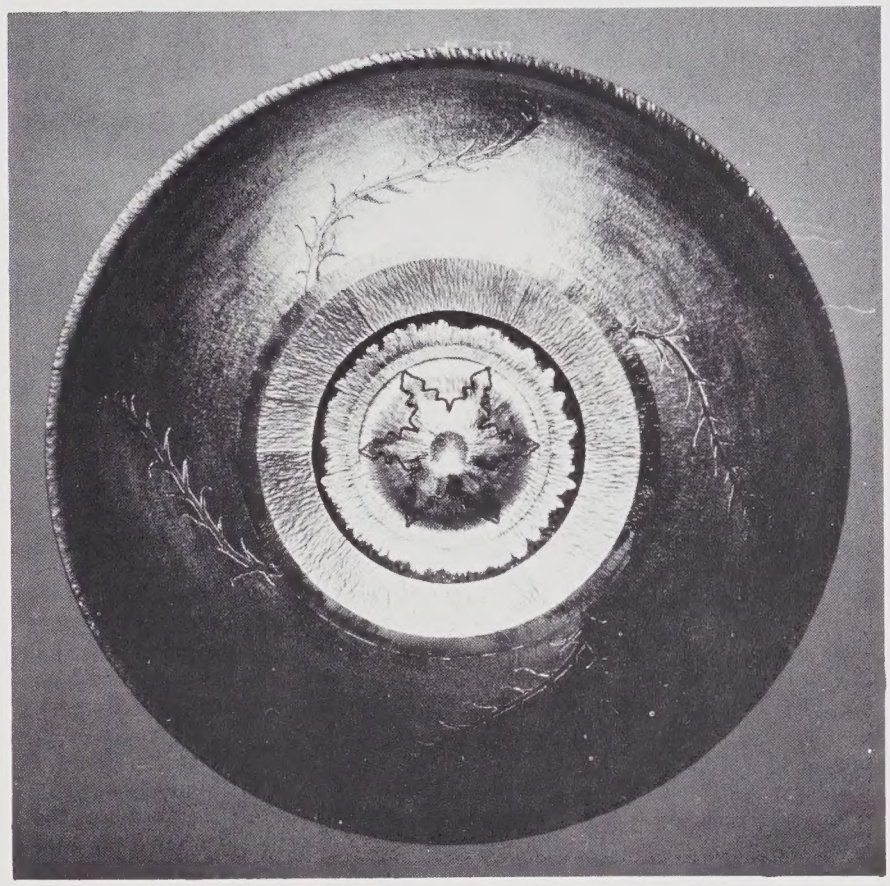
Each technique has to be respectfully encountered before one is fully conversant with the phenomena of being able to see and control a color which one can prove is scientifically "not there". This aspect of using the metals has been a constant source of inspiration to my work — knowing that whatever piece one makes, its appearance is always changing, depending on the amount of light available. At the moment, I am working on a sculpture which will be audible before it is visible, and yet change color as the wind blows. For me this is a new departure into the realms of sound, and I am sure any student or professional artist cannot fail to be stimulated by the purity of sound



James Brent Ward
Tantalum Bowl (below)

James Brent Ward
Tantalum Bowl (below)





which a piece of struck titanium makes.

In the coming year I hope to investigate the combination of visual and audible sculpture which fully utilizes the mechanical and physical properties of the metals. Anyone wishing further information about anodizing or the working of refractory metals should read a report written by myself in conjunction with the Worshipful Company of Goldsmiths in London, to whom I would like to extend a great thanks for financing my initial research and for being so tolerant of my aesthetic judgements, when scientific ones would have been more acceptable.

After this brief explanation of anodizing and oxidizing, I feel it is important to stress that even after six years of involvement with these metals, I still feel I am at the beginning of a new development in the use of color in modern jewelry and metalsmithing. My commitment to these metals come after a feeling of dissatisfaction with the materials available to me. I respected the magical qualities of gold, but was to a great extent inhibited by the vast wealth of historical stimulation that every culture provides. There seemed to be so much evidence of superlative craftwork that I could see no way of establishing an identity within the modern gold/silver movement. Every piece I made was always said to be "like" something which had already been constructed, so I sought a material and technique which I could develop and feel essentially part of. In 1971 I began some initial and rather erratic experiments with titanium — a metal I had been told was difficult to work, could not be soldered and was hard to bend, yet could be made to change color if electricity was passed through it. I found the tough steel-like crispness of the metal perfect for the geometric designs I was working on at the time, the light-weight ideal for use with silver or gold, and the quality of the colors excited my imagination. The ideas I had translated into pendants which, when worn, changed color according to the angle at which the light hit the piece. After 3 years of being satisfied with the flatness of titanium, I began to think more in terms of 3-D forms, and my experiments with tantalum and columbium began. These metals are very much like the rich uncles to titanium — they have that precious weight which titanium lacks and the iridescent colors of the high voltage range are more easily achieved; however, the metals are considerably more expensive. The particular beauty of columbium and tantalum is their malleability — they are soft enough to repousse or raise, yet rigid enough to create crisp hard-edged designs.

After this short length of time, I feel as though I now have my full designers repertoire of color and materials, and it is now time to reinvestigate the working properties of each metal on a much larger scale. Architectural titanium work is an aspect of modern technology which has not been fully considered by "environmentalists." I hope in the future to be able to communicate that arts and sciences can work in a collective harmony, and the heart and head of a new movement in respectful craftsmanship which illustrates that technology by its very nature is just as much part of the aesthetic world as are our flowers and trees.

(Editor's Note: J.B. Ward will conduct a workshop on this technique at Longwood as well as other schools.)

UPDATE: MOKUME-GANE (WOOD GRAIN-METAL) © 1979

by Hiroko Sato Pijanowski and Eugene M. Pijanowski

(Acknowledgements: We would like to give our deep appreciation to Mark Morgan and Colleen Archibald, undergraduate students in metal at the University of Michigan, for contributing their valuable time to the experimentation with forge diffusion of non-ferrous metals and exciting pattern developments; without which this paper would not have been possible at this time.)

PREFACE

MOKUME-GANE has been an ongoing exploration of the inherent possibilities in pattern development and the efficient means of diffusion since our last report has made it necessary for a re-evaluation on what has transpired and, hopefully, answer those questions that have been posed by the international readership of the Goldsmiths Journal and Craft Horizons.

I. THE LAMINATES AND SURFACE PREPARATION

Copper is always used as a basic metal in MOKUME-GANE because of its malleability, cost, availability and coloring possibilities. We mentioned in our first technical paper other metals that could be used for diffusion and that the best copper was electrolytic tough pitch, alloy no. 110. This is not really necessary because most copper is 99.9% pure.

The dimensions of the metal is up to the craftsperson in terms of pattern, the size and gauge of the sheets. Some indications through experience of the relationship between the starting dimensions and the resultant finished of the desired gauge (B & S) are listed: 5 cm (about 2") x 5 cm x 1.6 mm (14 ga.) x 10 layers would equal 11.5 cm (about 4½") x 11.5 cm x 1.6 mm; 7.5 cm (about 3") x 7.5 cm x 1.6 mm x 13 layers would equal 20 cm (under 8") x 20 cm x 1.6 cm; 10 cm (about 4") x 10 cm x 116 mm x 19 layers would equal 36 cm (about 14") x 36 cm x 1.6 mm

After deciding the non-ferrous metals to be used, their gauge, and size, the number of layers and the sequence to be stacked, they should be annealed, FLATTENED, and pickled. With silicon carbide wet/dry abrasive paper (320 to 360 in grit), abrade away any deep nicks. Use fine pumice powder with scotch brite to degrease all of the surfaces. To make sure that all the grease is removed, the metal sheets can be wiped with cloth saturated in denatured alcohol. Stack the metal in the sequence selected.

Sandwich the layers of non-ferrous metal laminates with two steel plates approximately 6 mm (¼") in thickness, cutting it the same size as the metal which is to be diffused. If the steel plate is new paint with liquid paper (typewriter correction liquid*) or yellow ochre or the plate might stick to the other metals. The steel plates act as a weight and as a heat sink. A mild steel box of about 1 mm (18 ga.) to .8 mm (29 ga.) in thickness is made to contain the laminates and the steel plates. If the steel is new, paint the inside of the box as the steel plates. If the box and steel plates have been used before for diffusion, the painting is not necessary.

The making of the steel box is contained in our first technical report. The bottom dimension of the box should be the same as the laminates, the height should be a little less than the total height of the laminates, plus the thickness of one steel plate. The reason for this is that when the second steel plate is placed on top it allows the entire mass to be bound very tightly with binding wire (1.9 mm [12 ga.] to 1.6 mm) after the sides have been bent upwards to form the box.

When diffusing a small number of laminates and the stack is a combination of ONLY copper and copper alloys (the size of which could be approximately 5 cm x 5 cm x 1.6 mm x 10 or 15 layers) it would be simpler to use two steel plates as a top and bottom binding with wire. We have diffused small stacks as noted above more than 20 times with success every time. If one of the laminates is silver then the laminates should be placed in a steel box, because the melting point of the silver is much lower than copper or the copper alloys. By placing the laminates containing silver in the steel box, the mass will maintain a more even heat and will keep the layers of silver from sliding when sweating occurs.

II. DIFFUSION

Traditionally, charcoal and coal are used as a heat source in the forge when diffusing non-ferrous metals in Japan. Our first idea was to try using an electric kiln, as was so stated in our previous report. We realized that it was very difficult to control the heat, especially when working with silver. We did not use coal at that time, because of the sulphur it contained and our lack of knowledge in the area of blacksmithing.

This past summer, Hiroko had the opportunity to work with Glenn Gardner who is a blacksmith. He suggested to use coke. We have been working with coke in the forge and getting 100% success since then. This method is easier, simpler and the results are better.

The preparation of the forge is rather simple. Find some way of keeping the coke from falling down the duck's nest. An iron screen could be used or one could be made that is more solid and sturdy. Take a 6 mm (¼") thick steel plate and cut it into a 25 cm (about 10") square or diameter circle and drill about 40 to 50 holes with a 6 mm or larger drill bit. Place it over the center of the duck's nest and raise it above the floor of the forge, using fire bricks, so that plenty of air can be used. Build three side walls with standard fire bricks. If an air leak occurs around the outside of the steel plate or fire brick walls, pack with wet sand. Place a sheet of steel about 1.3 mm (16 ga.) to 1 mm (18 ga.) on top of the fire brick walls to act as a roof to retain the fire more efficiently.

Fig. 1

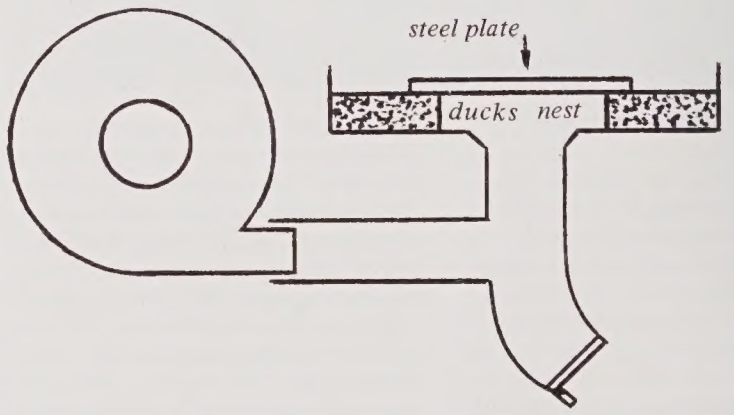
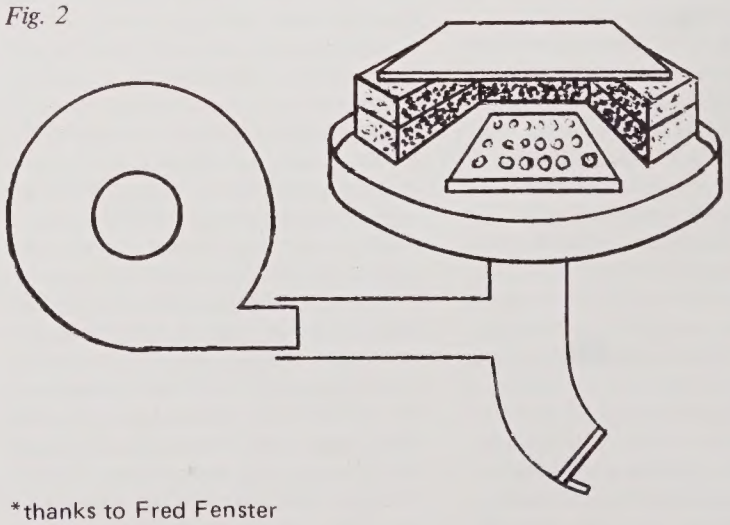


Fig. 2



*thanks to Fred Fenster

There are basically two kinds of coke — one which is made in the forge and the other commercially made. Forge-made coke is easier to light because it is very porous. You can use newspaper and twigs as a starter for the fire and then introduce coke and much air. Commercially-made coke (made out of metallurgical coal), which has less ½% sulphur, is compressed (more solid) and less porous, so it is harder to light. An easy way to start the coke fire is by using charcoal briquettes that are broken into ¼ their original size; break up the coke to the same size**. Throw 8 to 10 handfuls of the charcoal into the forge and apply charcoal lighter. Ignite. When a blue flame becomes apparent from the charcoal, begin cranking the air slowly and apply 2 or 3 handfuls of coke. Increase the air as the coke begins to ignite. Increase the air and add about 8 more handfuls of coke. When the coke has been ignited half way through or more, there still exists a strong high fire (flames should encompass the entire area of the cavity produced by the side walls). This is when the box containing the laminates is inserted into the fire. The flame now is producing a reducing atmosphere which is perfect for diffusion. If you allow the coke to become entirely red, the flames will die. The fire is too hot for diffusion and if this occurs there is no longer a reduction atmosphere. After putting the box of laminates into the forge, slow down the input of air, but allow enough air so that the entire box is covered with flames. Heat soak well for about 10 to 20 minutes. The timing is dependent upon the size of the laminates. Examples: 5cm x 5cm x 10 to 15 layers, about 10 minutes; 7.5cm x 7.5cm x 10 to 15 layers, about 10-15 minutes; 10 cm x 10cm x 15 to 20 layers, about 20 minutes. It is a good idea to turn the box over a couple of times in the forge during diffusion. This has to be done in the flames of the fire to avoid oxidation of the metal. When the laminates turn red-orange, the metal will soon start to sweat. Remove the box of laminates from the forge and lightly tap with a wooden mallet. When the laminates are still red, put back into the forge and bring to red-orange and again repeat with mallet. Remove laminates from the box and, when still red, hot forge.

When dealing with silver as a laminate, one should watch the silver only. When the silver starts to sweat, take it out and very lightly hammer with a wooden mallet. Put the laminates back into the forge and repeat. Remove the laminates from the box. Wait til the red color is gone and resume forging. After the laminates have been successfully diffused, cut all the sides with a hack saw and rough file. Reduce by forging to about 7mm (¼"). It is now ready to begin patterning. The method of traditional pattern development is discussed in our first report.

III. TWIST PATTERNS

A. Simple Twist Patterns

The perfectly diffused laminates can be treated as any single piece of metal. Blacksmithing techniques can be used without any problems.

The preparation and the procedures of diffusion are the same, except the shape of laminates are rectangular because bar or rod forms are more commonly used in blacksmithing. After diffusion, clean all the sides by sawing and filing. Heat to red-orange, if laminates are copper and copper alloys, and place in a vise. When still red, twist with a wrench or similar tool. Repeat until desired twists are attained. While twisting the bar, folding of the edge occurs along the outside edge of the twist. This should be removed by filing. Hot forge and draw out to rectangular bar. The pattern of this simple twist is shown in Fig. 3. We also decided to cut a twist in half and see what kind of pattern would be exposed. Fig. 4 is the pattern produced when sliced horizontally. Fig. 5 is the pattern when cut vertically. We also diffused two twisted bars together. See Fig. 6. The twisting of diffused metals has great potential. It has been explored by Mark Morgan and Colleen Archibald (undergraduate students in metal at the U. of Michigan); the next two sections are written by them.

**thanks to Mark Morgan

Fig. 3–7.5cm (3") l x 1.5 cm (5/8") w x 0.6cm (¼") thick

Fig. 4–7.5cm l x 1.5cm w x 0.3 cm (1/8") thick

Fig.5–7.5cm l x 0.8cm (5/16") w x 0.6cm thick

Fig. 6A–10cm (under 4") long x 1.3cm (½") w x 0.8cm thick

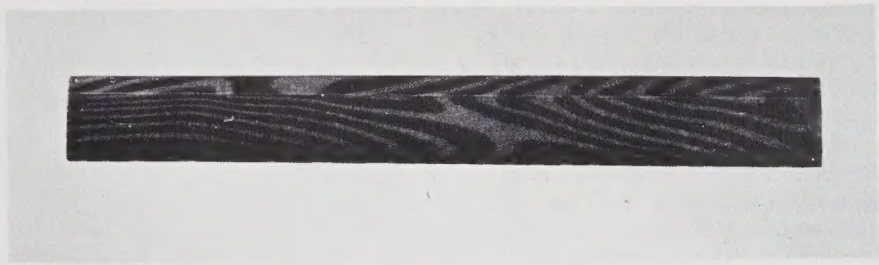


Fig. 6B–7.5cm l x 0.8cm w x 0.6cm thick

Fig. 7–52cm (20½") l x 1.3cm (½") dia. & 0.5cm (3/16") dia. at the point

Detail of Figure 7

B. Advanced Twist Patterns

The tapered piece of MOKUME-GANE (Fig. 7) was developed as a result of a desire to find a way to create patterns in more massive pieces of metal rather than in the usual sheet form.

The general idea behind what was done to produce the pattern in the tapered form was taken from methods used in pattern welded steel and iron.

The first stage in creating the taper and its pattern was to make two separate bars of laminated layers of KUROMI-DO and copper. Each bar consisted of 7 layers of copper and 6 layers of KUROMI-DO. Both the copper and KUROMI-DO were 14 gauge and each bar measured 6" x 1½". After the metal was diffused, each bar was forged out lengthwise until they were approximately 12" long x 1" wide x 3/8" thick.

The next step was to twist each bar, one clockwise and the other counter-clockwise, so that the two could be diffused to make a herringbone pattern. Twisting was done at orange-yellow heat with one end of the bar secured in a vise and the other gripped and turned with a wrench. We found that if the bars were forged into a cylinder with each left flat for gripping during the twisting process, cracks forming in the metal could be avoided. These cracks occurred when rectangular bars were twisted and forged back into a rectangular bar. The sharp edges of the spiral, created as a result of twisting, sometimes fold over in the forging process causing cracks. The tighter the twist, the more of a problem this becomes.

Another approach to avoid these cracks, which is not as logical as the first method mentioned, is to make the twist in its rectangular form and then forge it into a cylinder before making it into a rectangular bar again. In both methods, to avoid cracks, it is imperative that any high, thin edges or existing cracks on the spiral be ground out before forging into a rectangular bar.

Each twisted piece, after being forged into a rectangular bar, measured approximately 15½" long x 1½½ wide x 3/8" thick. Each bar was then cut in half, making four pieces. They were then put in pairs, each pair consisting of one clockwise twist and one counter-clockwise twist. Each bar measured approximately 7½" long x 13/16" wide x 3/8" thick. (Fig. 8) The taper was made from one of these pairs.

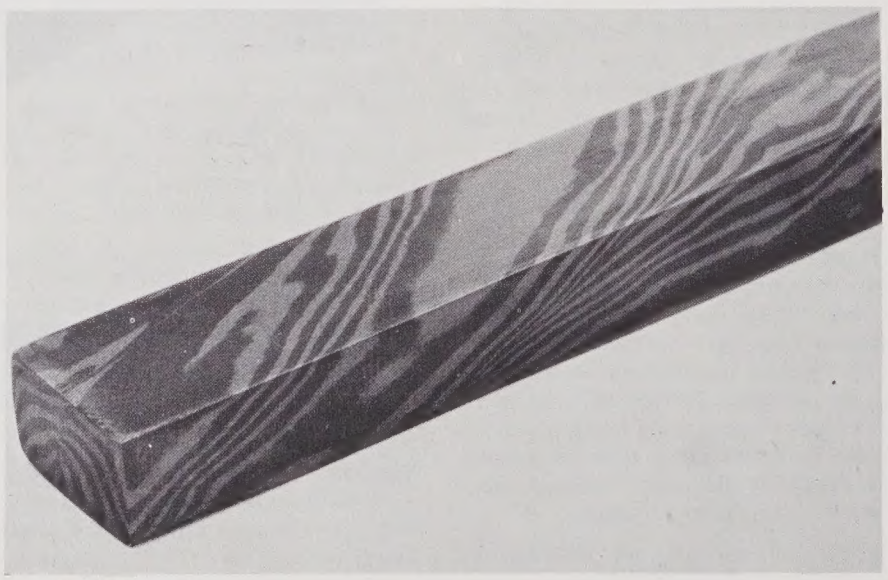
Now the pair of twisted pieces were diffused, form a herringbone pattern by placing one on top of the other, rather than side by side. **Most important in this step is perfect flatness on the surfaces to be diffused.** Unlike the thinner gauged sheet metal usually used in the diffusion process, these thick bars will not bend closer together under the pressure created by the binding wire and steel sheets. Therefore, they must fit together extremely well.

After the two twisted bars were diffused together, the resulting bar was forged out in length somewhat. The bar was rounded to a cylinder and twisted. It was then forged into a rectangular bar, sanded, and colored in ROKUSHO so the pattern could be seen. (Fig. 9) The last step was forging this bar into a tapered bar and coloring it. (Fig. 7)

—Mark Morgan

Fig. 8–19cm (7½") l x 3cm (1-3/16") w x 1cm (3/8") thick (above)

Fig. 9–about 33cm (13") l x 2.5 cm (1") w x 1.7cm (5/8") thick (below)



Detail of Figure 9

C. Combination of Twist Patterns and Traditional Wood Grain Patterns

MOKUME-GANE has captivated my interest from my first exposure to the process. I, too, found that the information on the subject was scarce and only on the method of soldering, which by its inherent nature has limitations on size and pattern variations.

My work with MOKUME-GANE by diffusion has enabled me to create forms and patterns that would not otherwise be possible by using the soldering method. I began this piece by cutting 16 gauge copper into seven rectangles of 1½" by 6". Also seven rectangles of 14 gauge KUROMI-DO into like size pieces.

After cleaning my metal and stacking them alternately, I sandwiched them between ¼" steel plates that had been prepared for this purpose. This stacked metal was bound tightly with heavy binding wire.

The metal was placed into a hot forge and heated in the flame, which produces the reduction atmosphere necessary for the molecular exchange to take place between the atoms, diffusing the metal together. The stacked metal was turned over once to insure even heating. Upon judging the metal diffused, which is done by watching the color change, the diffused metal was removed and lightly hammered with a wooden mallet. The binding wire was removed and the piece was hot forged to elongate the rectangle.

The piece was heated in the forge and when the predetermined area was bright red, it was put into the vise and the end of the diffused metal was gripped with a hand tool and twisted. (Fig. 10) It is beneficial to enlist the aid of a friend during this step. The diffused metal was annealed and the twisted area was brought up to bright red heat again and the process was repeated, tightening the twist. This process did produce small cracks on the edges of the twist which I filed away.

The split was created by using a common blacksmithing technique. The metal was heated to bright red and the metal was put on the anvil and a chisel was hammered, thereby cutting the metal (Fig. 11) Filing was now done to smooth the cut edges before further forging was done.

Fig. 10

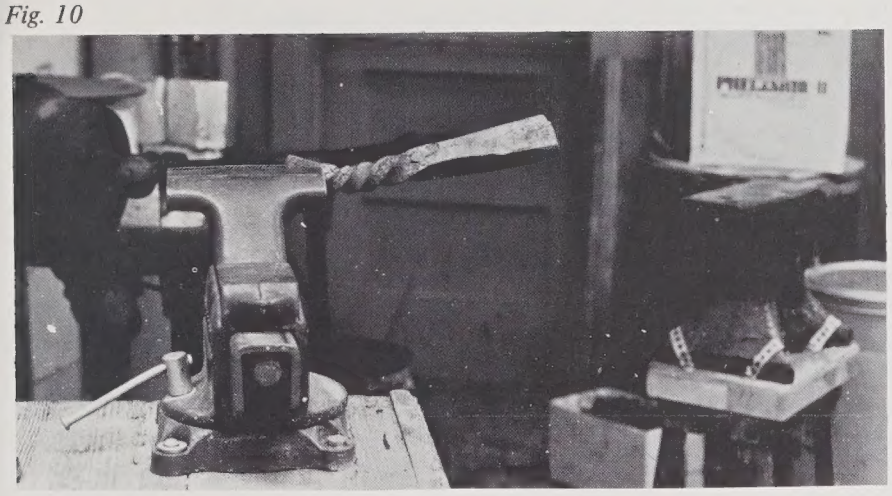


Fig. 11

I also drilled into an area to expose the layers beneath. I used a round burr to round out the bottom of the drill holes in order to insure the maximum amount of layer exposure.

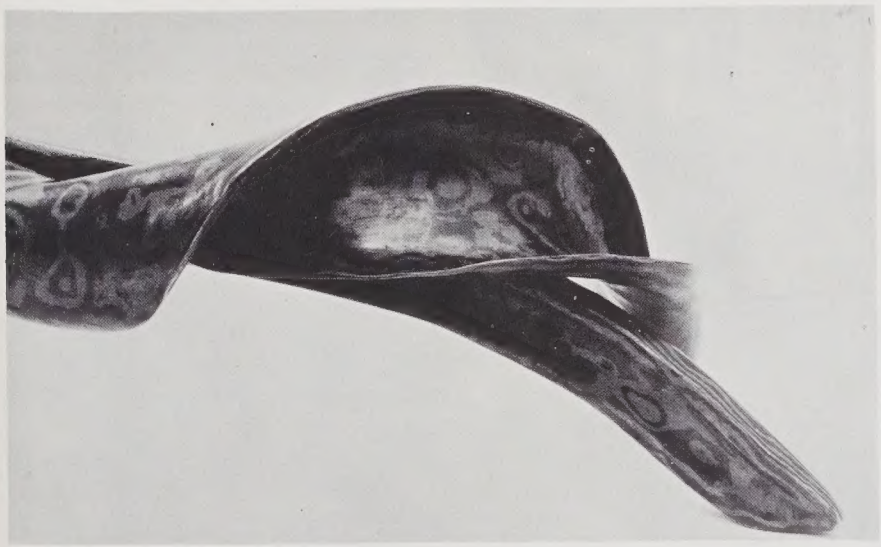
Further forging exposed more layers in the metal. I did the final forming using stakes and planishing hammers. The metal was filed, sanded and rubbed with pumice powder and colored in ROKUSHO (Fig. 12).

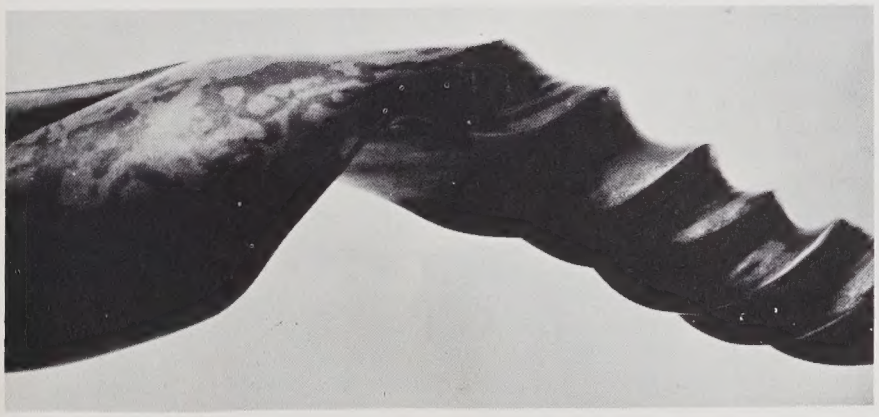
The form was conceived to express patterns and movements that could only be created by this method of metalworking, by hand manipulation of the metal. The fourteen separate layers of copper and KUROMI-DO have by heat, diffusion and forging become one homogenious metal.

—Colleen Archibald

Fig. 12–34.5cm (13½") l x 10cm (4") h

Detail of Figure 12





Detail of Figure 12

IV. COLORING

In searching for a more expedient way of the coloration of copper and copper-based Japanese alloys and in mixed metal pieces that could contain sterling and fine silver, a return to the classic reference by H. Wilson on Japanese metalwork was necessary. Wilson's formula for the coloration of SHAKUDO—copper sulphate 24 grams, table salt 6 grams, distilled water 90 ml. Boiled for 40 minutes in this solution were metals that were prepared by first removing all fire scale, finishing to a fine pumice surface and then degreasing. (NOTE: Highly polished pieces react more effectively.) In those pieces that contained sterling or fine silver, DAIKON (Japanese raddish) was ground and applied to the surface and placed in the boiling solution. This protects the silver from discoloration.

The first test piece of copper, sterling and hard silver solder, the sterling turned gray, the copper reddish brown and the silver solder remained white. The second test piece of copper and KUROMI-DO, the KUROMI-DO became black and the copper reddish brown and was slightly etched. The third test piece, SHAKUDO became purplish black. The results SEEMED satisfactory. The test pieces were set aside for a couple of days in an area that was lighted by artificial sources. Tney remained unchanged. They were then inadvertently moved to a position that exposed them to sunlight. Within a few hours the first test piece containing silver and copper, the sterling turned darker gray and the copper turned black. The second test piece had a slight etching of the copper resulting in a slight relief surface and the subtle quality of the blackened copper and the bluish tinge to the KUROMI-DO gave a very pleasant effect. The SHAKUDO remained visually unchanged. The quantity of salt in the Wilson formula had sensitized the metals to sunlight and after a few hours sets the color, which has remained unchanged after two weeks of daylight. More test pieces were used as the initial pieces and the results were the same.

Using the same constants, ie, the amounts of distilled water, metal preparations and duration of time in boiling solution, the chemical variables were manipulated until results occurred which were acceptable.

Copper sulphate—6 grams, table salt—1 gram, distilled water—900 ml. Another first piece containing copper and sterling with hard silver solder (using DAIKON). The sterling and silver solder unchanged; the copper, reddish brown. Another second test piece containing copper and KUROMI-DO: the copper reddish brown, the KUROMI-DO black with slight iridescence. The SHAKUDO turned purplish black. (NOTE: The higher the gold content in SHAKUDO the more purple or eggplant in color.) These were subject to same amount of sunlight and remained unchanged. Other tests have been made and the results are acceptably consistent.

After using the above solutions to achieve coloration on a metal object, traditionally it was waxed to form a protective film. We recommend Renaissance Micro-Crystalline Wax that is used at leading British and American museums to preserve and restore metals, paintings, leather, etc. It is available from Talas Div. of Technical Lab Services, 104 Fifth St., New York, NY 10011.

L. Brent Kington suggested the use of the Renaissance Wax and gave us our initial exposure to damascus steel and blacksmithing techniques which we gratefully acknowledge.

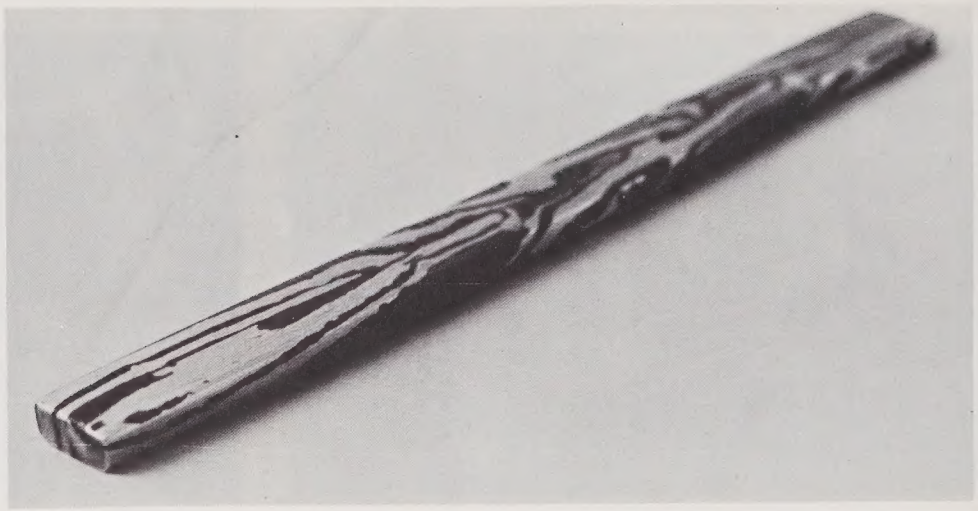


Fig. 14–Fine silver and copper diffused, one section twisted counterclockwise and another clockwise, then again diffused to create a herringbone pattern.
–Pijanowski

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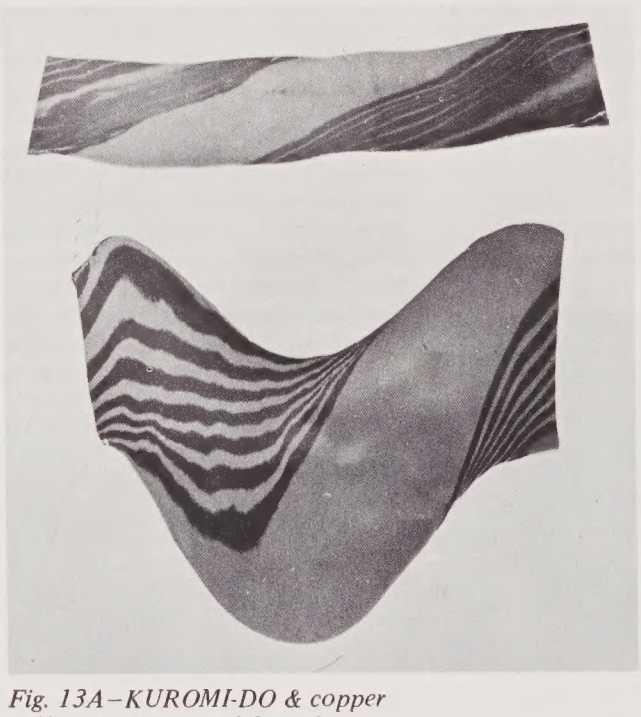


Fig. 13A–KUROMI-DO & copper diffused, twisted and forged. Top piece prior to rolling to deform as illustrated in bottom pice.
–Pijanowski

Fig. 13B–Same pieces as in 13A turned over on this side the bottom piece has been filed to the core of the twist to expose a star-like configuration.
–Pijanowski

Gene & Hiroko Sato Pijanowski, mokume-gane (silver, copper, kuromido & brass) 7"w

THE GLASS-COATED MELT SPINNING OF GOLD FILAMENTS

by Tomoko Goto
Department of Fibre and Polymer Technology, Nagoya Institute of Technology, Nagoya, Japan

(courtesy of the Gold Bulletin, International Gold Corporation Limited, South Africa)

Fine gold wire for use in the electronics industry is normally die drawn in a number of stages. The author describes a technique whereby fine filaments of gold, and other metals and alloys, can be produced directly from the molten metal in one stage.

The demand for fine metallic fibres is growing steadily as a result of their increasing use, especially in composite materials and in electronic and electrical equipment. The cold die-drawing process is widely used to satisfy this demand but the cost of fibres produced by this method increases significantly as fibre diameter decreases, thus limiting commercial applications. The forming of filaments directly from molten metal by the Taylor process (1) and by the melt spinning process (2) has therefore been attempted. A difficulty has been that the molten metal tends to evaporate or disintegrate before solidification takes place during the spinning process. A modification of the Taylor process, in which the molten metal is glass-coated during spinning overcomes this problem and has been found effective (3) for the production of metallic filaments less than 50μm in diameter, from copper, silver, iron, stainless-steel and various other metals or alloys.

The apparatus used is shown in Fig. 1. About 1 g of metal is placed into a glass tube and melted by an induction heating coil. Through interaction between the magnetic field and the induced eddy current, the molten metal can be kept globular and suspended in a fixed position. When the glass tube is drawn, the metal is pulled down with the glass and a glass-coated metallic filament is formed, which can be coiled on a winding drum. The glass tube is automatically fed at a suitable rate and the position of the globule relative to the heating coil is kept fixed as shown in Fig. 2. The temperature of the metal is predetermined by the position of the molten globule. Virtually continuous melt spinning of copper, silver and stainless-steel has been made possible by taking advantage of the spinnability of pyrex glass (3), the filaments being formed at a cooling rate of more than 10^5 deg.C/s with a reduction of cross-section of about 99.9 percent.

The melt spinning of gold (99.9 percent purity) has been carried out by the same method as that used for copper (4). Although the density of gold is high and the spinning operation is difficult compared with copper, spinning was successfully conducted from a melt at a temperature of 1 200 degrees C using winding speeds varying from 57 to 332 m/min. The glass coating was removed from the wire while it was still coiled on the spool by dissolution in a 45 per cent hydrofluoric acid solution. The diameter of the filaments obtained decreased slightly with increasing speed of winding and ranged from 3 to 13μm.

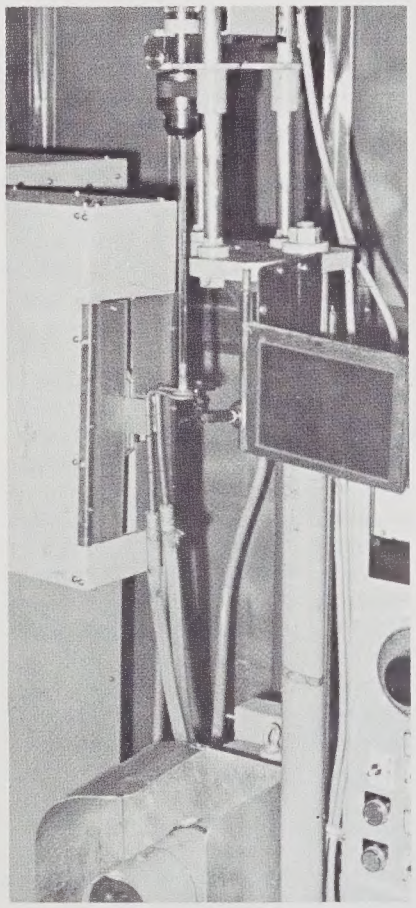


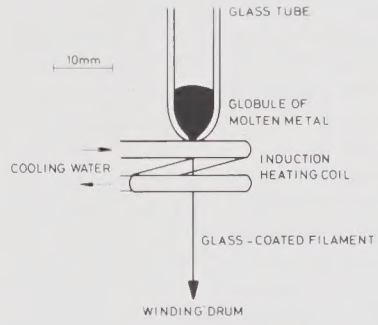
FIG. 1—Apparatus developed at the Nagoya Institute of Technology for the production of fine wires by the glasscoated melt spinning method. The machine consists essentially of a glass tube feeding device, an induction coil heater and a winding drum. It is seen here during the production of gold wire.

Gold filaments produced in this way are shown in Fig. 3. They have smooth surfaces and are free from defects. Several cross-sections of filaments were observed by scanning electron microscopy. In each case the fibres were found to be polycrystalline with a grain size of more than 2 000 A. Fibre texture was investigated by X-ray diffraction and double <111>+<100> textures were observed, with volume fraction of the <111> component increasing with faster winding.

The tensile strength of the gold filament was also measured. A noticeable feature of the stress-strain curves was the high hardening rate, as a result of which a high stress level was reached after an elongation of a few percent only. The tensile strength increased significantly as the diameter of the filaments decreased.

It is remarkable to note that while bulk pure gold has a tensile strength of 130 MPa with an elongation of 45 percent, filaments 3.5μm in diameter produced by glass-coated melt spinning were found to have a tensile strength of 285 MPa and an elongation of 7 percent. The latter figures are well within the standard requirements for gold wire for semiconductor lead-bonding (5).

It is probable that multi-metallic filaments containing gold could also be produced by the method described above, using a modification of the double bushing techniques which have been described for the manufacture of the fibre glass (6,7).



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3. T. Goto et al., Trans. Jpn. Inst. Met., 1977, 18, 209-213, 557-561, 562-566, 759-764, and 1978, 19, 60-61.
4. T. Goto and M. Nagano, J. Soc. Fiber Sci. Technol. Jpn, 1977, 33, T302-T306 (in Japanese).
5. ASTM F72.
6. Owens Corning Fiberglass, U.S. Patent 2,693,668 and British Patent 1 370 906.
7. Nippon Selfac K.K., British Patent 1 319 670.

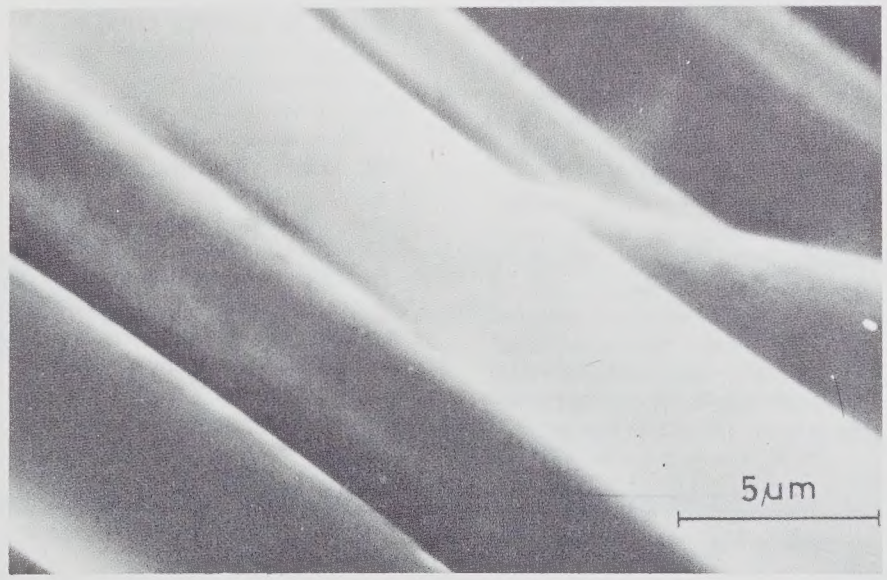

FIG. 3—Scanning electron micrograph of gold filaments spun at 332 m/min. The surface quality of the product is excellent.

SILVER INSTITUTE PUBLISHES TECHNICAL SILVER SUMMARIES

The Silver Institute studies more than 275 reports each month of new research done throughout the world on silver and silver products. Four times a year, the Silver Institute presents about 70 of these reports in a publication called New Silver Technology. These presentations are not simply abstract references, but each item is intended to be a readable summary of the new technology which has been developed. The names of those who did the work and the full addresses, showing where the work was done or reported, are also provided, as well as the patent designations, or the issue and page designations for the technical publications carrying the texts of the reports.

Goldsmiths Journal has selected eight of these summaries and are reprinting them with permission of the Silver Institute, Suite 1138, 1001 Connecticut Ave., N.W., Washington, DC 20036. We felt these were the most interesting, wide-ranging, and potentially applicable. Subscription to the New Silver Technology is available from the Silver Institute at $25 per year. Members finding these reports particularly interesting should subscribe directly to the Institute to insure a complete and uninterrupted supply of summaries.

METHOD OF ACCELERATING EVAPORATION OF FUEL IN INTERNAL COMBUSTION ENGINE INTAKE SYSTEM BY HEAT EVOLVED BY DECOMPOSITION OF HYDROGEN PEROXIDE AND APPARATUS FOR SAME

Heat generated by the decomposition of hydrogen peroxide on a silver catalyst greatly improves the combustion of gasoline in a cold car engine. Conventionally, cold engines are started by using a choke to supply the engine with a fuel enriched mixture. The initial low temperature of the engine, however, is not sufficient for complete combustion to occur. As a result large amounts of carbon monoxide and unburned hydrocarbons pass through the exhaust to pollute the air.

These problems are considerably alleviated by using the heat from the silver catalyzed decomposition of hydrogen peroxide into oxygen and water. The catalytic chamber is provided with fins to effectively radiate this heat. The heat may be supplied to the fuel-air mixture just after it has passed the throttle valve enroute to the combustion chamber. Alternatively, the fuel itself may be heated just before it is mixed with air. In yet another embodiment, the silver catalyst chamber may be placed so as to heat the intake air just before it is mixed with the fuel.

Regardless of the location of the catalytic chamber, the heat supplied causes more effective evaporation and combustion of the fuel. Heat from the decomposition reaction is available immediately when the engine is started. Some conventional systems utilize heat from the exhaust to further heat the engine, but such heat is available only after the engine has been running for a period of time.

The oxygen generated during the silver-catalyzed decomposition of the hydrogen peroxide can also be used to bring about more complete burning and thus reduce pollution. This oxygen may be fed into either the combustion chamber or into the exhaust line where after-burning occurs.

A silver catalyst which is very effective for decomposing hydrogen peroxide is described in British patent 893,987 issued to D. Napier & Son Ltd. of London. It may be made by sintering a mixture of 90% metallic silver powder and 10% copper oxide powder. This silver catalyst will withstand, without damage, temperatures up to 700 C (1292 F).

An aqueous hydrogen peroxide solution containing at least 70% hydrogen peroxide is recommended for the heating of the fuel-air mixture. At this concentration, hydrogen peroxide decomposed by a silver catalyst produces a temperature of 233 C (451 F) with the release of 475 calories per gram. An 80% hydrogen peroxide solution decomposed by a silver catalyst produces a temperature of 487 C (908 F) with the release of 550 calories of heat per gram, to immediately warm the fuel mixture.

Once the engine is warm enough for nearly complete combustion, the supply of hydrogen peroxide is stopped by an automatic valve. This valve is also closed as soon as the motor is turned off. (In English)

Zene Ueno, Kosaka Katuaki, and Fumio Wagatsuma, Nissan Motor Co., Ltd., 17-1 Ginza, 6-chome, Chuo-ku, Tokyo 104, Japan, *United States Patent* 4,056,086

ELECTROLYTE FOR SILVER OXIDATION

The surfaces of silver and silver plated objects can be electrolytically oxidized to give an attractive dark red or violet surface layer. The pore free oxidized coating is resistant to corrosion and possesses good mechanical properties. Such a protective coating is useful both for decorative silver items in the home and for silver used in electronics.

Electrolytic oxidation is preferred over chemical oxidation since lower temperatures and shorter treatment times can be used for the electrolytic process. Moreover, there is less consumption of the reactants during electrolytic oxidation.

Most conventional electrolytic oxidation techniques require direct current. Now, using a novel electrolyte, the oxidation can be achieved with an alternating current. Use of an alternating current makes it possible to employ a simpler technology.

One preferred electrolyte solution contains 15 grams of cupric chloride ($CuC1_2$) per liter. During oxidation the solution is maintained at 80 C (176 F). A silver object is oxidized in the electrolyte by applying an alternating current for 20 minutes. This current has a frequency of 50 hertz and a current density of 50 amperes per square decimeter (465 amperes per square foot). After oxidation the silver object is rinsed with water and dried, leaving the object with a dark red corrosion resistant coating. (In German)

Dimiter Panajotov Nenov and Verginia Ilieva Danova, Vissh Mashinno Elektrotekhnickeski "Lenin" — Nis Sofia, Bulgaria, *German Patent* 2,559,098, July 7, 1977.

METALLIC COATING REDUCES THERMAL STRESS

It has been found that heavy silver plating sharply increases the thermal conductivity of high-temperature and high-strength materials. Alloys such as iron-nickel, which are strong at high temperatures, conduct heat poorly. Thus, when one part of a structure made of such a material encounters much heat, it cannot pass the heat along to the rest of the structure rapidly enough, and the result is a hotspot, or great thermal stress within the structure.

For example, a wing panel of the Space Shuttle Orbiter is fabricated from an iron-nickel alloy honeycomb encased by an iron-nickel alloy sheet. When the Orbiter enters the earth's atmosphere, heat is generated which produces temperatures up to 1300 F (704 C) on the front surfaces. Tests showed that without a silver coating, this would result in the tremendous temperature difference of 1145 F (618 C) between the front and the back of the wing panel, causing intolerable thermal stress.

However, silver conducts heat 30 times better than iron-nickel, and is unaffected by hot atmosphere. Thus, by the simple procedure of electroplating the iron-nickel alloy with a 10 mil (0.25 millimeter) thick coating of silver, the temperature differential is reduced by a factor of 5.5 to an easily managable difference of only 210 F (98.9 C) between the front and back of the panel.

This important new procedure can help to prevent structural overloading in turbine blades, heat exchangers and power plant parts, and can permit more efficient design of many items of high temperature equipment throughout industry. (In English)

R.D. Morgan, Rockwell International Corp., Johnson Space Center, Code AT3, Houston, TX, 77058, *NASA Tech Briefs, U.S. National Aeronautics and Space Administration*, Winter 1977, volume 2, no. 4, page 490.

PROCESS FOR RECOVERING SILVER, COPPER AND STAINLESS STEEL FROM SILVER BRAZED STAINLESS STEEL SECTIONS

An obsolete supersonic aircraft may contain approximately 300 pounds of silver. This silver has mostly been used to braze honeycombed steel sections to contoured outer sheets of steel. Steel brazed with silver is especially needed for the flaps, ailerons, and engine-supporting struts because of the very high temperatures and stresses encountered by these parts when the aircraft fly at supersonic speeds.

An electrolytic process has now been developed for recovering the precious silver from the obsolete supersonic aircraft. Such a process was not previously needed since relatively little silver was used in the older subsonic aircraft.

The brazed honeycomb sections typically contain between 5% and 30% silver and between 2% and 15% copper. These sections are first sheared into pieces which have maximum dimensions of about 12 inches (30 centimeters). These pieces are then shredded into pieces having maximum dimensions of about 1.5 inches (about 3.8 centimeters). Screening eliminates particles with diameters less than 0.02 inches (0.05 centimeters).

The shredded pieces are placed in the cylindrical steel mesh anode basket of an electrolytic cell. This basket is separated by about 1 inch from a cylindrical steel cathode. Application of a current density of 30 amperes per square foot and a potential of 0.1 to 5 volts causes formation of silver crystals on the cathode. Rotation of the basket at 0.5 to 5 revolutions per minute ensures proper circulation of the electrolyte and efficient migration of the silver ions to the cathode. Plastic coated scrapers which are attached to the rotating anode loosen the silver crystals from the cathode, thereby causing them to fall into a collecting basket located below the electrodes. These silver crystals have a purity of 97% to 99.9% and can be refined to 99.99% purity by conventional techniques.

The electrolyte consists of a silver nitrate — copper nitrate solution which initially contains about 25 grams of silver per liter and about 20 grams of copper per liter. During electrolysis the copper content of the electrolyte gradually increases since the silver brazing alloys typically contain between 8% and 30% copper.

Portions of the copper-enriched electrolyte are periodically removed and replaced by fresh silver nitrate solution. Addition of copper scrap to this extracted spent electrolyte causes the contained silver to precipitate as crystals. After removal of the precipitated silver the resulting copper nitrate solution can be electrolytically refined to recover metallic copper. (In English)

Beverly W. Dunning, Jr. and D. Harry Chambers, Department of the Interior, 18th and C Sts., N.W., Washington, DC 20240, *United States Patent Application*, 814, 959, July 12, 1977; available as *NTIS Report PB-271 610* from National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

ELECTROCHEMICAL ETCHING FABRICATION OF CONTACT SPRINGS FOR ELECTRIC WATCHES

A novel etching process is used to fabricate pieces of complex shape from a sheet of platinum-silver alloy. Intricate patterns can be reproduced with high dimensional accuracy. The process is thus especially well suited for the manufacture of the contact springs for electric watches.

Matched photo-resists applied on opposite sides of the platinum-silver alloy plate define the pattern which is to be etched. The alloy plate will typically measure between 5 microns and 100 microns in thickness.

Both sides of the plate are electrochemically etched through the masks in an electrolyte which contains nitric acid and hydrochloric acid. A silver chloride scale which forms as the silver of the alloy reacts with the chloride ions of the etching solution can be periodically removed with ammonium hydroxide. The etching and scale removal treatments are alternately repeated until the platinum-silver alloy sheet is completely and precisely cut through. (In Japanese)

Kazumitsu Shimada, Daini Seikosha Co., Ltd., 31-1 Kameido 6-chome, Koto-ku Tokyo, Japan, *Japanese Patent*, 77 46,889, Nov. 29, 1977.

DIFFUSION WELDING OF COPPER AND TITANIUM

A silver foil can be used to promote the diffusion welding of copper to titanium. Alternatively, a combination of metal foils may be placed between the parts which are to be joined.

A particularly effective combination includes one foil of silver, one foil of iron, and two foils of nickel. Each of these foils is not thicker than 100 microns. One of the nickel foils is placed on the copper. This is followed, sequentially, by the iron foil, the second nickel foil, the silver foil, and finally the titanium piece. This composite is pressed together with a pressure of up to 49 megapascals (up to about 7,100 lbs. per square inch) and heated to 950 degrees C (1742 degrees F). The combination of heat and pressure causes diffusion of the various metals so that a strong bond is formed. (In Japanese)

Yoshimitsu Utsu, Takashi Ohmae, Yasuhiro Fukaya, Masasumi Nagareta, and Yasuyuki Yoshida, Mitsubishi Heavy Industries, Ltd., 5-1 Marunouchi 2-chome, Chiyoda-ku, Tokyo, Japan, *Japanese Kokai Patent* 78 01, 151, Jan. 7, 1978.

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DETECTION OF SURFACE ENRICHMENT BY X-RAY SPECTRAL ANALYSIS: SILVER ENRICHMENT ON THE SURFACE OF ROMAN SILVER COINS

Measurements by two different X-ray techniques are combined to identify Roman coins which are almost totally silver on the outside but contain large amounts of copper-silver alloy under the silver surface. Coins of this type were first minted about 193 A.D. during the reign of the Emperor Severus. The silver-white surface effectively concealed the lower intrinsic value of the copper-alloyed coins.

An indication of the ratio of silver-to-copper in the surface layers of the coins is obtained by placing the coin in a beam of 30 kilovolt electrons. This electron beam excites X-ray emission from a depth of 3 to 7 microns.

The composition of the center of the coin, by contrast, is estimated by X-ray fluorescence. X-rays from a tungsten tube penetrate deep into the coin so that fluorescent X-rays from the silver matrix arise from a depth of about 100 microns (4 mils).

Virtually no difference in composition between the center and the surface is detected in 84 silver coins minted between about 30 B.C. and 190 A.D. Beginning with coins minted in 193 A.D., however, there is a noticeably higher silver content in the surface than in the center. From 193 A.D. to at least 270 A.D. there appears to be a trend towards the use of more and more copper in the center. Coins minted in the latter years of this period thus generally exhibit a much greater discrepancy between the silver-to-copper ratio of the surface and the silver-to-copper ratio of the core.

In a separate study, the composition of the core of each coin is examined both from the front and from the back by fluorescent X-ray. This study reveals no front to back composition differences in coins minted prior to 190 A.D. The central portions of coins minted after 193 A.D. do exhibit moderate composition inhomogeneities as between the two sides. These inhomogeneities, however, are much smaller than the differences in composition between the copper-enriched centers and the silver enriched surfaces. (In German)

R. Klockenkamper, Institut fur Spektrochemie und angewandte Spektroskopie, Postfach 778, D-4600 Dortmund 1, German Federal Republic, *Fresenius Zeitschrift fur Analytische Chemie*, 1978, volume 290, issue 3, pages 212-216.

SILVER KEEPS COPPER HARD DESPITE HEAT

The fins for automotive radiators and other types of heat exchangers operate efficiently if they are made of copper, which has high thermal conductivity. However, the fins must be soldered to the tubes and other components of the radiator or heat exchanger, and the soldering temperature, even though applied for a short time, will soften regular copper fins so that handling deforms them and damages their performance. Several alloys could be substituted which would resist softening but would sacrifice thermal conductivity. To raise the softening temperature and still maintain high conductivity, the inclusion of a small amount of silver has been found to give excellent results.

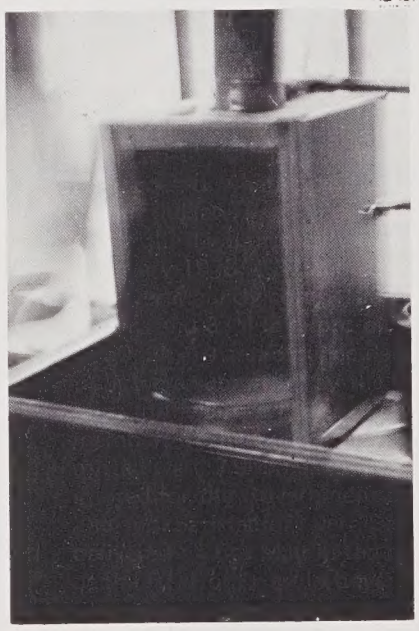
For example, the Rockwell 15T hardness of unalloyed copper before heating is 76, but when heated for 1 minute to a soldering temperature of 400 C (752 F), its hardness drops to 52. On the other hand, the inclusion of 29.2 troy ounces of silver per ton in the copper (0.01% silver) maintains the high THERMAL conductivity and provides an initial Rockwell 15T hardness of 78.5. When this alloy is heated for 1 minute at the soldering temperature of 400 C (752 F), the hardness drops only to 77 — still harder than the regular copper before heating, and much harder than the 52 hardness of regular copper after heating.

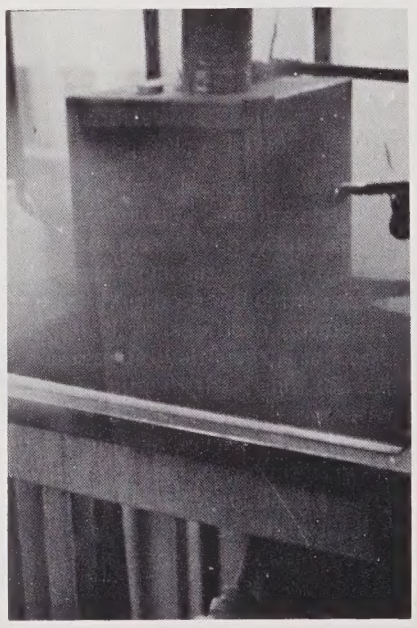
Silver bearing copper alloys are also used for electronic applications. Here the property which makes such alloys preferred is the ability of silver to raise the softening temperature without lowering the ELECTRICAL conductivity of the copper. Silver bearing copper is showing excellent results for integrated circuits, power devices and lead frames in electronic equipment. (In English)

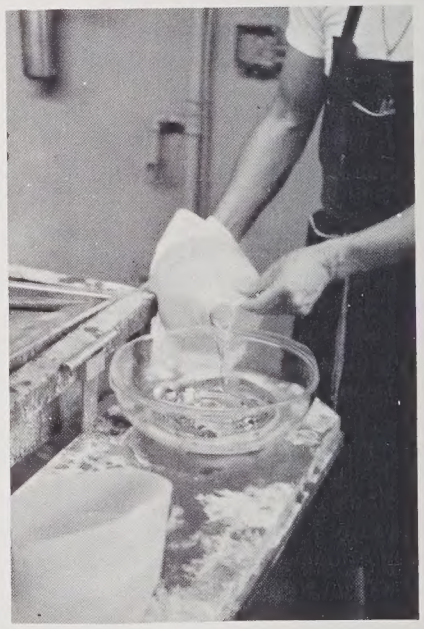
Edgar R. Hack, Olin Brass, East Alton, IL 62024, *Communication to the Silver Institute*, March 10, 1978.

BOMBING REVISITED

Re "Answers" in issue no. 21 by Nathan Winkler, we omitted the pictures that were to be included with the "bombing" answer. Despite protestations regarding the safety of the procedure, any solution containing cyanide should be handled with the greatest care. Cautious of the process — use an enclosed box-like hood to prevent splashing and to draw off fumes. The attached pictures show such a hood with the sliding door removed to show placement of the cyanide containing dish. Note the dense vapor given off when the hydrogen peroxide is added to the cyanide.







Pouring cyanide solution into dish (top)

Dish under hood before adding hydrogen peroxide to cyanide solution (middle)

Heavy vapor given off as bombing action takes place (bottom)

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INFORMATION

WORSHIPFUL COMPANY OF GOLDSMITHS REPORTS ON THEIR ASSAY OFFICE (London)

The high work load reported in the last review continued throughout the present period. 14,743,733 articles were submitted for hallmarking at the London Assay Office during the twelve months 1st May, 1977 to 30th April, 1978, an increase of 34% compared with the same months of 1976/7. 10,676,337 of these articles were gold, 4,060,085 were silver, and 7,311 were platinum. Imported articles showed an exceptional upsurge with a total of 2,269,315 articles, an increase of 117%. A high proportion of these imports were gold necklets of Italian manufacture.

Larger silver articles were received in smaller numbers after the end of 1977, probably due to the ending of the Silver Jubilee year and the special Jubilee mark which was undoubtedly a boost to this end of the trade. However, silver jewellery, particularly chainwork such as necklets and bracelets, continued to be submitted in large quantities. The "dog tag" craze appeared almost to have died by the end of the period, but the fashion for necklets and pendants in both gold and silver has continued unabated. The main items of jewellery now received and which account for the major part of the work of the Office are bracelets, necklets, pendants, rings, and earrings.

As mentioned in the last review the exceptionally high work load in 1977 created considerable problems in the Assay Office, as indeed at all the Offices, due to the build up of a back-log of work and consequent delays in completion of parcels submitted by manufacturers. However, by the autumn of 1977 the delays had been considerably shortened and by the end of the year the back-log had been completely cleared. During the early part of 1978, in spite of an even higher intake, a reasonable turnaround was achieved.

A major difficulty facing all the Assay Offices is how to maintain sufficient flexibility in the face of sudden fluctuations in work load, since it inevitably takes time to recruit staff and expand accommodations. In view of a predicted substantial increase in the trade during the next ten years, the Company is considering plans for the redevelopment of their property adjacent to 11/12 Foster Lane with the possibility of it being used for additional Assay Office accommodation. In the meantime the third floor in the 11/12 Foster Lane building will shortly be taken into use by the Assay Office and parcels of foreign wares will be dealt with exclusively in that building. The provision of a strong room in the basement of the building caused some constructional problems owing to the depth of foundations which were necessary. With the resiting of the foreign work, the drawing and marking departments on the third floor of the Hall are being reorganised to take maximum advantage of the additional space available for British wares.

A development designed to improve operations in the office has been the computerised control of the flow of work through the office. Information is fed into the computer as packets pass through each department and can be instantly recalled, thereby giving valuable information to assist in management and in dealing with customers' queries. Such information is particularly required when a build up of work occurs and previously this could only be obtained by manual recording with inherent practical limitations.

There has been frequent contact with Birmingham, Sheffield and Edinburgh Assay Offices through meetings of the Joint Committee and its Technical Sub-Committee, and on other occasions. Contact is also maintained with the Assay Offices in the member countries of the International Convention and there have been two meetings of the Standing Committee of which the Deputy Warden is Chairman. Although the volume is not large, a steady number of articles has been submitted for Convention marking and a proportion of imports into the United Kingdom is Convention marked in the country of origin.

At a sitting of the European Parliament in October 1977 a representative of the Commission of the European Communities announced that the proposal for an E.E.C. Directive on hall marking would be abandoned. This now leaves the way open for E.E.C. countries to become signatories to the Convention and it is hoped that one or more may do so.

There were four meetings of the Antique Plate Committee held during the period of this review at which 276 articles were examined. Of these 147 were considered not to comply with the Hallmarking Act and the Committee recommended how they could be brought within the law. The Committee examines, free of charge, any piece which is suspected of contravening the law and articles are received from auctioneers, retailers and private owners. Since the Committee was formed in 1939, 21,856 pieces have been examined of which 11,466 have been condemned and, where possible brought within the law.

At the Trial of the Pyx on 8th February 1978, 1,375 gold sovereigns, 33 silver Maundy coins, 133 silver crowns and 37,466 cupro-nickel coins of 50, 25, 10 and 5 pence denominations were submitted by the Royal Mint to the Jury of twenty-seven members of the Company. Also submitted were 2,905 cupro-nickel coins minted for the Government of New Zealand. Satisfactory verdicts were delivered on 5th May in the presence of the Rt. Hon. Harold Lever M.P., Chancellor of the Duchy of Lancaster.

RESALE ROYALTIES

(courtesy of Sculptor's News Exchange, Nov. 1978)

Many legislators at both the state and federal level are championing a proposal which would establish resale royalties.

Authors and composers have traditionally been compensated by resale royalties. It is suggested that because of their right to receive royalties, these other creative workers enjoy an advantage that visual artists are denied. A picture is presented of a collector who, having purchased a work of art for relatively little, resells it for a great deal more, pocketing the entire profit and leaving the artist, whose effort first created the work, and whose subsequent accomplishments may have contributed to its increase in value, with no part of such increase.

In 1973 collector Robert Schull resold for $85,000 a work by Robert Rauschenberg for which Schull had originally paid less than $1,000. The question has to be asked; is the picture of a collector profiting at an artist's expense a common situation or rather, is it only an occasional occurance?

The royalties that composers and authors receive are based on the multiple initial sales of their endlessly reproducible efforts. For each additional copy of a novel or musical composition sold, the author or composer may receive additional compensation. So too may the visual artist who chooses to sell additional copies of an infinitely reproducible image of a work of art rather than the unique object in which the work itself is embodied.

In the case of a resale royalty, no additional copy of the original work is being produced, nor is the work itself being put to any wider use. The cause for payment of the proposed royalty would be the substitution of one owner for another.

What is proposed now is the establishment of a new right which is very different from a royalty and one which is not a natural extension of existing property and ownership concepts. Has the traditional method by which artists have been compensated placed them at a disadvantage? If we exclude such supplementary income — producing activities as teaching or wholly unrelated employment and exclude as well the grossly inflated earnings of such mass — appeal entertainers as rock stars or gothic novelists, visual artists would seem to be consistently better renumerated for their creative effort that their peers in the other arts.

That a work of visual art is customarily embodied in a tangible, physical object rather than, as in the case of literature or music, expressed through countlessly reproducible media as words or sounds has more than esthetic overtones. In addition

to their value being determined mainly by scarcity, works of art do not require the same degree of demand as do works of literature or music to gain a living for their creators. A piece of sculpture needs no initial market larger than a single buyer in order to be sold.

In Europe, where it originated, the resale royalty has not produced any substantial returns for the majority of artists. The resale royalty established in California last year has thus far proved to be a diverse element within the art community with almost no tangible benefits for artists.

There are other options to resale royalties. Among the alternatives would be the establishment of an art bank similar to that which exists in Canada or possibly legislation that would make art a favored form of investment.

APPRENTICESHIP INFORMATION CENTER

As an arm of the U.S. Employment Service, Apprenticeship Information Centers (known as AIC's) serve as clearing houses for information about apprenticeships. Not all apprenticeship openings are filed with AIC's. However, openings in all registered programs must be listed with the Centers. AIC's offer information, counseling, and testing facilities to anyone interested in an apprenticeship, although help is targeted at women, members of minority groups, and veterans. The Centers maintain files of qualified applicants for referral to apprenticeship sponsors, keep lists of local apprenticeship programs and their requirements, and often monitor local market conditions to keep an eye on what's happening in industries that employ large numbers of apprentices.

Apprenticeship information centers are operating in the following locations:

* 1818 - 8th Ave., N, Birmingham, AL 35203
* 207 E. McDowell Rd., Phoenix, AZ 85004
* 161 W. Venice Blvd., Los Angeles, CA 90015
* 235 - 12th St., Oakland, CA 94607
* 555 Pennsylvania Ave., N.W., Washington, DC 20012
* 150 N. Clinton St., Chicago, IL 60606
* 737 Washington St., Gary, IN 47402
* 141 W. Georgia St., Indianapolis, IN 46225
* 1309 Topeka Blvd., Topeka, KS 66612
* 402 E. Second St., Wichita, KS 67202
* 225 Huntington Ave., Boston, MA 02115
* 1100 N. Eutaw St., Baltimore, MD 21201
* 7310 Woodward Ave., Detroit, MI 48202
* 390 N. Robert St., St. Paul, MN 55101
* 1411 Main St., Kansas City, MO 64105
* 505 Washington Ave., St. Louis, MO 63101
* 1433 Bacharach Blvd., Atlantic City, NJ 08401
* 554 Broadway, Bayonne, NJ 07002
* 220 W. Broad St., Burlington, NJ 08016
* 517 Federal St., Camden, NJ 08103
* 1004 Broad St., Newark, NJ 07102
* 65 Morris St., New Brunswick, NJ 08901
* 165 Prospect St., Passaic, NJ 07055
* 370 Broadway, Paterson, NJ 07501
* 488 Broadway, Albany, NY 12207
* 730 Fillmore Ave., Buffalo, NY 14212
* 344 Fulton Ave., Hempstead L.I., NY 11550
* 244 W. 54th St., New York, NY 10019
* 155 W. Main St., Rochester, NY 14614
* 432 W. 11th Ave., Eugene, OR 97401
* 1437 S.W. Fourth Ave., Portland, OR 97201
* 2048 Arch St., Philadelphia, PA 19122
* 915 Penn Ave., Pittsburgh, PA 15222
* 40 Fountain St., Providence, RI 02903
* 1295 Poplar Ave., Memphis, TN 38104
* 1802 Hayes St., Nashville, TN 37203
* 904 Granby St., Norfolk, VA 23510
* 318 E. Cary St., Richmond, VA 23219
* 233 - Sixth Ave., N., Seattle, WA 98109

WHAT ONE CONFERENCE HATH WROUGHT

(courtesy of Artist/Craftsmen Information Bulletin, No. 22, Aug. 2, 1978)

A direct result of last April's Apprenticeship Conference, sponsored by the American Crafts Council, is the establishment of a new National Crafts Apprenticeship Program (NCAP) under the direction of a broadly representative Coordinating Committee chaired by Gerry Williams, director of the spring meeting. Following recommendations which came out of the Conference, an NCAP sub-committee has been formed to draft proposals for sample models of possible apprenticeship situations, write guidelines for contractual agreements, and document available resources. NCAP also has authorized psychologist William Adams to conduct preliminary research on the dynamics of working arrangements in an apprenticeship situation.

Broad participation is sought. Crafts organizations and media groups will be contacted to assist in the formulation of a definition of what constitutes reasonable training models which meet Department of Labor requirements and other governmental regulations. Individuals with ideas on these and related subjects are urged to contact Gerry Williams, RFD 1, Goffstown, NH 03045.

With the assistance of a grant from the Tiffany Foundation, a summary of the April Conference will be distributed through the American Crafts Council. Among reports are discussions of government regulations (Fair Labor Standards Act, OSHA, Workmen's Compensation, etc.), legal considerations, different types of apprenticeships, and the role of the academic world and crafts educational programs. Contact ACC directly at 44 W. 53rd St., New York, NY 10019, or call 212/977-8952.

Finally, a book, *Guidelines for Apprenticeship,* will be published in 1979, funded by the National Endowment for the Arts. Watch for this next year!

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ANNOUNCEMENTS

$15,000 AWARD TO OUTSTANDING CRAFTSMAN OF 1978

The Canadian Crafts Council announced today that Lois Etherington Betteridge of Ottawa has been awarded the second annual Saidye Bronfman Award for Excellence in the Crafts.

Lois Betteridge is acknowledged to be one of Canada's most outstanding silversmiths. "It is obvious," the jury stated, "that through constant dedication to her craft over the past 25 years she has not only become very skilled and self-disciplined but she has elevated her work to a high level of expression. She is a sensitive artist working primarily with resisting materials but she is in harmony with her medium, is most inventive and continues to search and grow. The jury is pleased to be able to give the public recognition she so richly deserves."

The Bronfman Award of $15,000 was created last year by the four children of Mrs. Samuel Bronfman to celebrate her 80th birthday. It will be given every year for ten years through the Canadian Crafts Council. Each winner is expected to have a solo exhibition of work within two years of receiving the award.

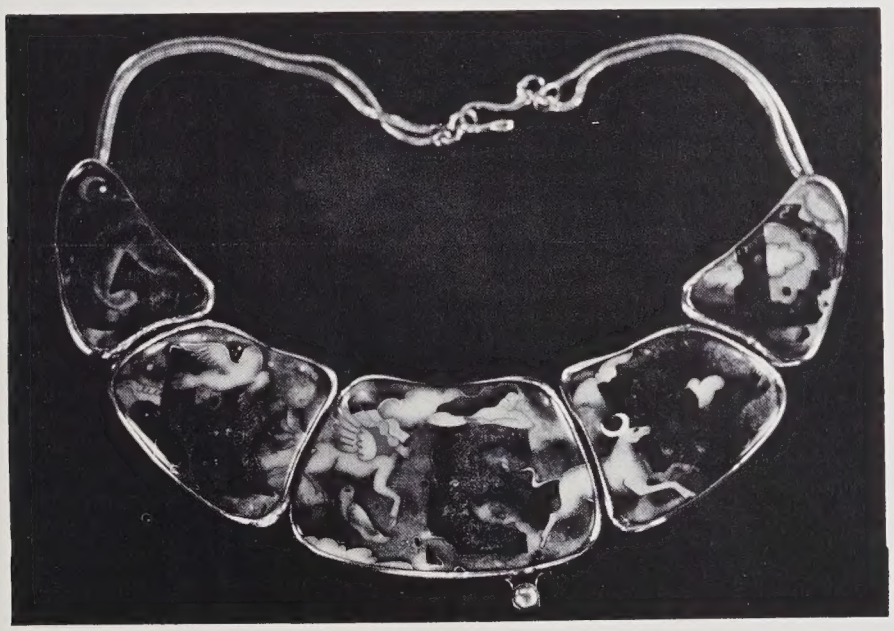
This year's jury included Orland Larson, President of the Canadian Crafts Council and goldsmith from Mahone Bay, N.S.; Charley Farrero, chairman of CCC's Exhibition Committee and potter from Humboldt, Sask.; Norah McCullough of Guelph, Ontario and former liaison officer for the National Gallery of Canada; and Maurice Savoie, potter from Longueuil, Quebec.

"Money Business: Grants and Awards for Creative Artists" compiled and edited by Jennifer Dowley, published by The Artists Foundation. The first edition of a unique directory to more than 300 organizations around the country that offer grants and awards to individual artists; cost is $7, available from American Council for the Arts, 570 Seventh Ave., N.Y., NY 10018.

The Crafts Report, the Newsmonthly of Marketing, Management and Money for Crafts Professionals. For subscription information, write: The Crafts Report, 700 Orange St., Wilmington, DE 19801.

MARIETTA COLLEGE MAKES PURCHASE

Marietta College recently purchased a piece of Colette's work entitled "Untitled 5 Pieces." The cloisonne enameled neckpiece will become part of the Permanent Collection of the College and displayed periodically.



Colette, "Untitled 5 Pieces," cloisonne enamel

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UPCOMING EVENTS

CONFERENCES

The George Washington University and Casemate Museum at Ft. Monroe, VA, will offer the seminar "The Conservation of Artifacts." The purpose of this seminar is to familiarize museum personnel and volunteers with basic conservation methods. The seminar will be conducted by P. Andrews Lins, Director of Conservation Wintertur Museum, Wilmington, DE. The dates are Feb. 16 & 17. For more information, call the George Washington U. Tidewater Center at 838-8444 or 838-8445 (Hampton, VA) or 623-3904 (Norfolk, VA).

The American Jewelry Manufacturer Magazine announces the following conferences:

1. Feb. 11-14, RJA International Jewelry Trade Show & Conference, Americana and Hilton Hotels, N.Y., NY.
2. March 4-6, MJ & SA Expo/NY, Hilton Hotel, N.Y., NY.
3. March 18-21, MJ & SA Expo/ Providence, Providence Civic Center, Providence, RI.
4. April 1-3, MJ & SA Expo/West, Bonaventure Hotel, Los Angeles, CA.

May 23-25, 1979; 3rd International Conference on Precious Metals, presented by the International Precious Metals Institute; to be held at the Continental Plaza Hotel, Chicago.

March 18, Texas Designer/Craftsmen; seminar in metal by Harold O'Connor, Southwest Craft Center, 300 Augusta, San Antonio, TX.

Feb. 24-25, 1979; Minnesota Retail Jewelers Assn. 75th Annual Convention and Upper Midwest Jewelers Trade Show, Radisson South Hotel, Bloomington, MN.

March 16-19, 1979; California Jewelers Assn. Annual Convention, Hotel Coronado, Coronado, CA.

April 6-8, 1979; Second Annual Spring Conference, to be held at Sacramento State College. For more information, write: California Blacksmith Assn., 737 Dwight Way, Berkeley, CA 94710.

April 7-10, 1979; American Gem Society Conclave, Shoreham Hotel, Washington, DC.

WORKSHOPS

Electro-Coloration by James Ward, July 16-20, Longwood College; 3 credit hours (undergraduate or graduate). Cost approximately $175, including room, board & tuition. Write: M. Baldridge, Art Dept., Longwood College, Farmville, VA 23901.

Crafts-Related Business Workshops, classes designed to encourage more effective business practices for craftspeople: Feb. 13—Taxes; Feb. 20—Money Management; Feb. 17—All-Day Workshop on Graphics for Marketing and Promotion. To register, write: School of the Arts & Crafts Society, 616 NW 18th, Portland, OR 97209.

Photopresentation on Metal by Kent Wade, scheduled for the week between winter and spring terms by the School of the Arts & Crafts Society. For more information, write: School of the Arts & Crafts Society, 616 NW 18th, Portland, OR 97209.

March 10 & 11, Shell Structures by Heikki Seppa; co-sponsored by the American Crafts Council and Greenwood Gallery. For more information, write: Greenwood Gallery, 1025 Conn. Av., N.W., Suite 905, Washington, DC 20306.

June 27-July 18, U. of Delaware Summer Session Workshop '79—Portugal; a 3-week trip involving a one-week tour of Lisbon to see various craftsmen and museums and two weeks of intensive work at the A Casinha Art Center in Monchique, Algaive (southern Portugal). Cost is $1,350 & tuition ($150), 1-6 credits. For more information, write: University of Delaware Art Dept., Summer Sessions Portugal, Newark, DE 19711.

The Jewelers' Circular-Keystone Magazine announces the following workshops. For further information on these, write: The Jewelers' Circular-Keystone, Chilton Way, Radnor, PA 19089.

1. May 14-15, JC-K/MGI Jewelry Management Institute Inventory Management & Control Seminar, New Orleans, LA.
2. May 16-17, JC-K/MGI Jewelry Management Institute Sales Management & Motivation Seminar, New Orleans, LA.
3. May 21-22, JC-K/MGI Jewelry Management Institute Advertising & Sales Promotion Seminar, St. Louis, MO.
4. May 23-24, JC-K/MGI Jewelry Management Institute Sales Management & Motivation Seminar, St. Louis, MO.
5. June 4-9, JC-K/MGI Jewelry Management Institute Discovery Week West: Seminars on Advertising & Sales Promotion, Financial Management, Inventory Management & Control and Sales Management & Motivation, San Francisco, CA.
6. June 11-12, JC-K/MGI Jewelry Management Institute Advertising & Sales Promotion Seminar, Vancouver, B.C.
7. July 8-12, Atlanta National Gift Market, Atlanta Merchandise Mart, Atlanta, GA.
8. July 24-25, JC-K/MGI Jewelry Management Institute Inventory Management & Control Seminar, New York, NY.
9. July 26-27, JC-K/MGI Jewelry Management Institute Advertising & Sales Promotion Seminar, New York, NY.
10. Aug. 1, RJA Fall International Jewelry Trade Show & Convention, Americana & NY Hilton Hotels, New York, NY.

Peters Valley presents the following Spring Workshops: April 7-8, Tom Farrell; May 5-6, Barbara Mail; May 26-27, Barry Merritt.

Peters Valley presents the following Summer Workshops: June 25-29, Bob Natalini/Van LeBus; July 5-7, Jamie Bennett; July 9-13, Merily Tompkins; July 16-27, Merci Zelmanoff; Aug. 2-4, Heikki Seppa; Aug. 6-17, Fred Woell; Aug. 20-30, Chuck Evans. For further information, contact: Peters Valley, Layton, NJ 07851.

April 7 & 8, 16th Annual Jewelry Casting Workshop; $50; graduate credit available; write Workshop Chairperson, Swest, 10803 Composite Dr., Dallas, TX 75220. (214/350-4011)

March 6 - 8, Shell Forming with Heikki Seppa; Harrisonburg, VA; sponsored by Virginia Crafts Council; write Mary Maher, VCC, 116 Second St. N.E., Charlottesville, VA 22901.

EXHIBITIONS

Reston, VA, "The Elements," Feb. 2-Mar. 11, 1979; to be held at the Greater Reston Arts Center, Inc.

Baltimore, MD, The Baltimore Winter Market; wholesale days: Feb. 21-22; public days: Feb. 23-25.

Craft Alliance Gallery, St. Louis, MO, presents the following exhibits: "Metals for New Collectors," March 4-28; "Metal Constructions and The Fiber Surface," June 3-27.

"Treasurers of Early Irish Art," Boston Museum of Fine Arts, Oct. 24-Jan. 21; Philadelphia Museum of Art, Feb. 26-May 27.

Carmel, CA, "Contemporary Design of Judaica in Sterling Silver," by Prof. Arie Ofir, Jerusalem, Jan. 19-Feb. 17, to be held at Concepts Gallery.

London, England, "Work in Progress," including Catherine Mannheim-jeweller, April 11-May 26, Crafts Advisory Committee.

Marietta, OH, The Marietta National '79, April 17-May 13, to be held at the Grover M. Herman Fine Arts Center.

Winnetha, IL, "Sixth Annual Midwest Craft Festival," April 21-22.

St. Louis, MO, St. Louis Spring Market of American Crafts, May 3-6, sponsored by American Craft Enterprises, Inc.

Worcester, MA, "9th Annual Craft Fair," May 19-20, to be held at the Craft Center.

Las Vegas, NV, "19th Annual Art Round-Up," June 3-July 5, to be held at the Las Vegas Art Museum.

Rhinebeck, NY, "Northeast Craft Fair," June 19-24, to be held at the Dutchess County Fairgrounds.

Toronto, Canada, "The Treasures of Tutankhamun," Nov.-Dec., to be held at Art Gallery of Ontario, only Canadian showing of this exhibition.

London, England, Public Exhibition, March 19-22, examples of fine craftsmanship and design, submitted, will be on show to the public in the Exhibition Room at Goldsmiths Hall; admission will be free of charge from 10:30 a.m.-4 p.m. daily.

Philadelphia, PA, "Plastics/Fibers" Jan. 15-Mar. 3, at the Walnut Street Theatre.

London, England, Caroline Broadhead: Jewellery, Feb. 1-Mar. 24, Crafts Advisory Committee.

San Diego, CA, the work of Prof. Arie Ofir, Feb. 4-16, to be held at San Diego State University.

Baltimore, MD, "Winter Market of American Crafts," sponsored by the American Crafts Enterprises, Inc., to be held at the Civic Center, Feb. 21-25, from 10 a.m. to 6 p.m.

San Antonio, TX, "Designer/Craftsman Show," Mar. 1-18, to be held at the Southwest Craft Center. This exhibit, sponsored by the Texas Designer Craftsman, is free to the public.

Plandome, NY, Felicia Liban Enamels, Feb. 4-March 2, North Shore Unitarian Society Gallery.

Rochester, NY, "Variations in Metal: Smithing & Sculpture," thru March 10, Gallery of Contemporary Metalsmithing.

Portland, OR, "Nelsie Davis," opening Feb. 1, Contemporary Crafts Gallery.

San Antonio, TX; Texas Designer/Craftsmen, March 1-18, Southwest Craft Center.

Pforzheim, Germany; March 3-April 16, SNAG European Exhibit, Pforzheim Museum.

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THE SYMPOSIUM WILL ALSO INCLUDE THE JURYING OF THE 4TH NATIONAL RING COMPETITION AND THE SOUTHEAST REGIONAL SAW, FILE AND SOLDER SPRINTS.

This project is partially sponsored by a grant from N.E.A.

OPPORTUNITIES

We would like to announce the opening of a new workshop/gallery: Foree-Johnson Metalsmiths, 106 Henderson St., Chapel Hill, NC 27514. Featuring the work of Don Foree & Don H. Johnson. They would like to extend an invitation to all SNAG members to visit their workshop/gallery. Those interested in showing their work through the gallery, please write them.

The School of Arts & Crafts in Portland, OR, is now accepting applications for its newly established Resident Program. Eleven-month residencies on the new campus of the 70-year-old school will begin on Sept. 1, 1979. Six craftspeople (one for each field) will be chosen. The residency awards include individual studio spaces in the new buildings, sleeping rooms in one of the two remodeled houses on campus, and a shared kitchen. At the end of the residency, craftspeople will have a group exhibit of their work in the gallery. In exchange for free studios, housing and the final show, each craft resident will be expected to assist in the operation of the departments in which they are involved. In addition to the small private studios which they will be alloted, they will also be free to use the extensive specialized equipment in the main studios. Selections will be made on the basis of slides of work accompanied by an application. Applications must be received by July 1, 1979. Notification will be given by July 31, 1979. For application, please write: Resident Program, School of Arts & Crafts, 616 NW 18th, Portland, OR 97209.

Applications are now being accepted for the 8th annual Arthur F. Gleim, Jr. Scholarship Awards. The awards, presented in memory of the son of the chairman of the GIA Board of Governors, are open to prospective jewelers and those already working the jewelry field. The winning applicants selected by the Gleim Scholarship Board of 15 industry leaders, are awarded their choice to study any one of the GIA home study courses (including Diamonds, Colored Stones, Gem Identification, Pearls, Jewelry Design, Jewelry Retailing or Creative Jewelry Display). Applicants must be sponsored by either a jeweler who is a member of his state retail jewelers association, by a supplier-member of the National Wholesale Jewelers Association, or by a member of the Diamond Importers and Manufacturers Association. Deadline for application is April 30, 1979. For more information, and scholarship applications, write: The Arthur F. Gleim, Jr. Scholarship Fund, GIA, 1660 Stewart St., P.O. Box 2110, Santa Monica, CA 90406.

SLIDES REQUESTED

A cooperative program is now being developed between the GSA and the Endowment in which craftspeople will be selected early in the design process of a building project to work in close collaboration with the architect. Crafts to be included in the building will be identified and the craftsperson would design and develop those areas. Examples of this collaborative effort might include wall or floor surfaces, hardware, fixtures, doors and gates, bannisters, and other special features.

The NEA is preparing a list and slide collection of the work of craftspersons who have worked in collaboration with architects, or who have created architectural work. Slides are also being solicited from architects who have incorporated craftsmens' work in their buildings.

The Crafts Program is also preparing a presentation for the annual convention of the AIA in June of 1979. At that time a slide presentation will be made showing the work of craftsmen in architecture. In addition, a symposia on artist-architect relations—ie, how do you locate an artist, what does the artist expect from such a relationship, contracts, and general business procedures—will be held.

For these two major projects, slides of craftsmen's work in architectural usage should be sent to:

Eudorah Moore, Crafts Coordinator, National Endowment for the Arts, Visual Arts Program, Mail Stop 501, Washington, DC 20506

EXHIBITION OPPORTUNITIES

Deadline Date: Feb. 28; 6th Annual George A. Schuetz Memorial Fund Jewelry Design Contest, administered by the Gemological Institute of America. Entries are limited to designs for men's jewelry (rings, belt buckles, cuff links, tie tacks, etc.), and are accepted only in the form of renderings or wax models. For more information and entry forms, write: George A. Schuetz Design Contest, GIA, 1660 Stewart St., P.O. Box 2110, Santa Monica, CA 90406.

Deadline Date: March 15; April 6-27, 3rd National Ring Show, Visual Arts Gallery, U. of Georgia; no entry fee, juried. Write for more information: Gary Nofke, Art Dept., U. of Georgia, Athens, GA 30602.

Deadline Date: April 15; The Central Pennsylvania Festival of the Arts 13th Annual Juried Crafts Exhibition at the Museum of Art, Pa. State University Park, PA, July 8-Aug. 25. Open to any U.S. craftsman. Jury by slides. For entry forms and more information, contact: Dorothy Ashcroft Shimel, 332 W. College Ave., No. 2, State College, PA 16801.

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Deadline Date: May 1; Sterling Design Competition, open to all residents of the U.S. who are students in a course of design at the college, technical or graduate level during 1978-79. Entrants may submit 1 piece designed for functional use or esthetic display. For entry blanks or more information, write: Sterling Silversmiths Guild of America, 111 E. Putnam Av., Riverside, CT 06878.

The American Concern for Artistry and Craftsmanship announced the 3rd Annual American Crafts Festival to be held on June 30, July 1, 7, & 8, at Lincoln Center, NYC. Applicants are asked to submit 5 color slides for juried selection of work representative of that which will be displayed. For more information, write: American Concern for Artistry and Craftsmanship, P.O. Box 20, Hasbrouck Heights, NJ 07604.

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PEOPLE

MEMORIES

by Brent Kington

(Editor's Note: This article was written for and presented at the Vatican Seminar "Crafts: Art in Religion.")

While thinking about my topic for this seminar, I could not help but reflect upon the historical partnership of craftsmen and religion throughout the ages. Many of the beautiful art objects that we enjoy today, often hundreds of years after their execution, were made by craftsmen as an act of worship or as a contribution to enhance the worship of others. The creation of the medieval and the renaissance church was a series of phenomenal events. Artists and craftsmen, often over several generations, collaborated to build and to furnish a house suitable to the (noble) purpose of glorifying God and worshiping the Son of God.

One of my favorite books; one that I have relied upon for my research and as a text for my students, is a translation of a treatise on diverse arts written by Theophileus Presbyter. The translation consists of three books which were originally written in Latin. There is a book on painting, one of glass work and one on metalwork. Each is an outstanding record of the art and the artist of the day. There is uncertainty as to the date and place of the writing and as to the identity of the author; however, it is supposed that it was written by a German Benedictine monk around 1100 A.D. The intimate details, particularly in Book III on metalwork, leave little doubt that Theophileus was himself a practicing worker in metal. His discussion conveys vividly his feelings for the material, for the activities of the workshop, and his sense of responsibility to and love for his God. His ever present concern was to embellish the service and to magnify man's worship of God. Early in his prologue he quotes David, "Lord. I have loved the beauty of thy house." Later he encourages his young artist readers to ". . . confidently approach the house of God and to decorate it well and gracefully."

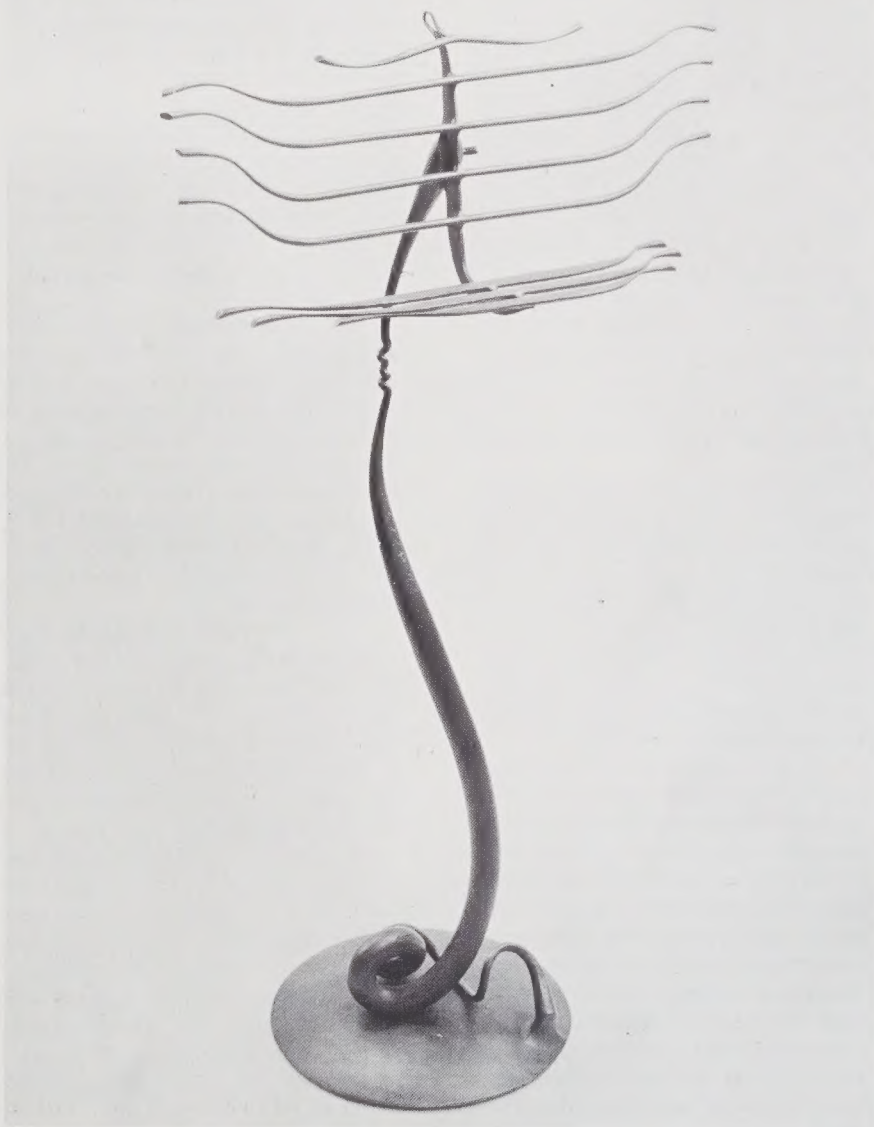
Like all artists, I do care how people relate to my work, but my motivation for working has always come from within myself. I am confident that this preference is a result of some very early experiences. As a young artist I lived in a rural area where commissions were most infrequent and clients were few.

I recognize that many craftsmen enjoy a direct client-craftsman relationship. These artists like to have specific goals and requirements to work toward. Solving specific problems and satisfying the client serves as a stimulant to their work. For me this approach has often seemed restrictive and inhibiting to my work habit. Of course I enjoy the acceptance and appreciation of my work as much as any artist. However, I am much more comfortable when, after a piece is completed, a viewer sees it and wants to possess it. He wants to possess something that has come from me and is a part of me and yet, he has found something of himself reflected in it also. No compromises or immediate outside influences were imposed as the work was taking form. As the maker, I had taken a great many chances and I had often flirted with failure. The risks were all mine, shared with no one. Now my satisfaction is heightened and reassured when someone else wants to include it in his life. And so I work alone, selecting my theme, utilitarian or non-utilitarian, and I continue to take the risks that are the well spring of creativity.

I prefer working in metals, silver and gold, copper and its alloys, and ferrous metals, over any other materials available to me. I have never really tried to analyze my preference, but it must have something to do with my work ethic. My love for metals must have roots in the contradictory aspects of the material itself. When it is being formed and embellished, it is a most plastic material and yet it has great strength and permanence when in use. Ferrous and non-ferrous metals are certainly the most durable and lasting of all craft media. Great historical metal objects have persisted not only because of the durability of the material, but also because it is easily repaired and it has always had intrinsic value to man. Even when a metal object has outlived its stylistic period and its usefulness, the material remains to be reconstructed for another use in another time. Fibers and woods can be torn and broken; ceramics and glass are easily shattered beyond repair. Metal has permanence.

My work is almost never planned in the traditional sense. I rarely draw or sketch what I am going to make, for I believe that in some way these techniques interfere with the free interplay of my mind and the materials. Most often I go directly to the materials, and with the freedom of intuition, bring into fulfillment, my ideas. My work requires a good deal of energy, for I refine my concepts while making a series of objects, usually working on several at the same time, exploring as many alternatives as possible. The work process is a search both within myself and with the materials for the fulfillment of the concepts. Often when I am exploring a new idea I use the process of elimination. This is, of course, very costly both in time and materials; however, this technique of trial and error suits my temperment and allows me to bring to full form those

Brent Kington, "Lectern," steel, 58" h, 1978



"Even when a metal object has outlived its stylistic period and its usefulness, the material remains to be reconstructed for another use in another time."

ideas and visual concepts that began as veiled mental images.

As an artist, I have never been satisfied to be occupied with just one concept or scale over a long period of time. Often while concentrating on a body of work with a single theme, I am working on other things as well. As an example, while recently working on a series of weathervanes, fairly large in scale, it occurred to me that the forms I was exploring might translate effectively into jewelry forms. I started a series of jewelry pieces in silver and gold, similar in form, but greatly reduced in scale. I often find this change of pace very refreshing and stimulating.

When my work is right, when the mental image and the finished piece are allied into one, I am energized both physically and creatively. I receive energy both from the work process and from the ideas that the form suggests. I see opportunities for variations in form and line, new ideas flow freely. Many times, as I am engaged in the work process, the object will change a number of times, becoming much different from the original concept. On occasions, I have become so stimulated by a new or altered idea that has developed as I have worked that I have left the piece and explored the new idea as fully as possible before completing the earlier one.

For the past eight years, I have been primarily concerned with making weathervanes and wind moving sculpture. The processes that I use are principally traditional blacksmithing techniques. In fact, my studio looks very much like a turn-of-the-century smithie. I found all of my tools discarded and uncared for within a few miles of my home.

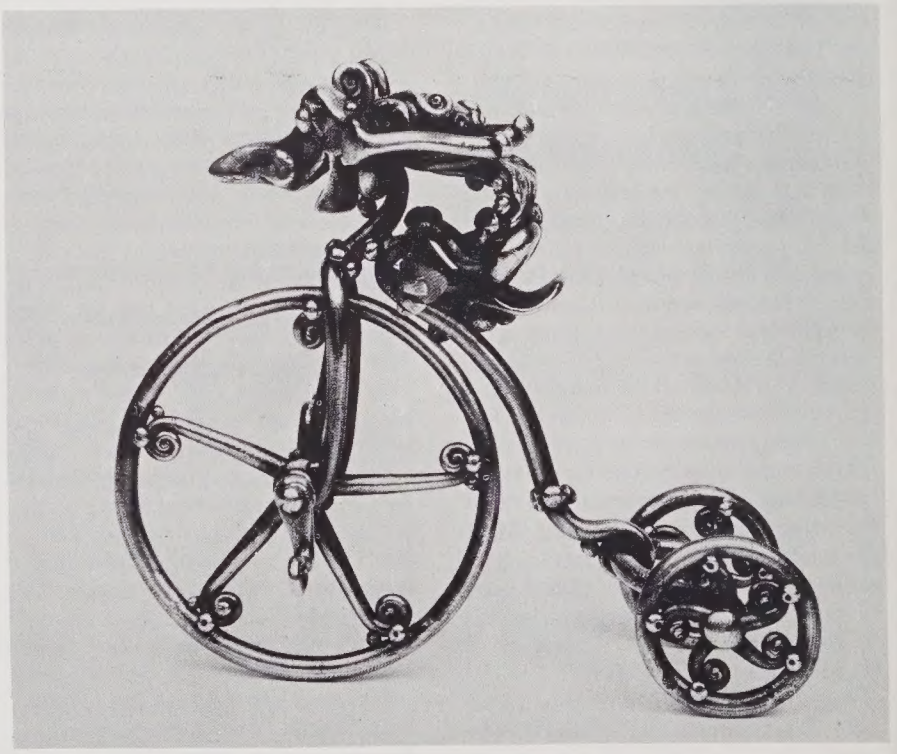
As a young artist, I located in a rural college community in the midwest, far removed from the mainstream of the art and craft movement in the United States. This environment was most likely my most important early profession experience. I was forced to become self-reliant. There was no one to imitate. It was essential for me to become self-motivated and to become my work's best critic. In this environment I refined my skills and matured as an artist.

The community in which I lived expressed little need for most art forms. The religious community in this area uses few special altar or communial impliments and little embellishment in its services. Under these conditions, for some reason, I found the opportunity to grow and to mature in my work. I found complete freedom — freedom to speculate, to invent, and to play with ideas and materials.

During this time, I executed many pieces for my children. Becoming a father had a great impact on me. As all fathers do, I searched the toy stores for things that I thought would delight my children. However, I realized that I was presenting them with disposable objects — things with little durability and no expression of me. I desired to present them with toys made in love, designed and executed so that they would be treasures of childhood to be lovingly repaired if necessary and presented to the next generation. This idea of making heritage pieces became very important in my work and I made my own variations of the traditional rattles, bells, and whistles.

On stormy nights, the electrical services were unpredictable, so I made sterling candlesticks for their rooms. In the early sixties, animal and human motifs were important in my work. The whistles took on bird forms. The candlesticks were totem structures of playful human types standing and sitting on one another's shoulders with an occasional bird perched on someone's nose.

When the children began to crawl, I bought them plastic pull and push toys and began my own variations in sterling. Rarely then did a plastic car from the dime store have a driver in it. Mind had drivers, riders and fanciful hood ornaments. The wheels of my cars were seldom truly round, there were no fenders, and there was little doubt that the drivers and riders were having a grand time. I had been making these objects for almost two years before I realized that adults had almost as much fun playing with them as children did. As a good toy should, they brought the child out of the adult for a little while. People often asked to come to my house to



Brent Kington, "Weathervane No. 1," 56" l, 1978 *(top)*

Brent Kington, "Tricycle No. 1," sterling, 7"h, 1967 *(bottom)*

"I rarely draw or sketch what I am going to make, for I believe that in some way these techniques interfere with the free interplay of my mind and the materials."

see the toys and I began to realize the appeal to the child in all of us. I started exhibiting them and they generally received a warm reception.

When I bought my two-year-old son his first tricycle, I learned how important fantasy is to a child and I recalled how important fantasy has always been for me. For Tod, the tricycle was seldom just a tricycle. From morning until bedtime it was a rocket, a pony, a garbage truck, or a tractor. It was a car or an airplane or a pickup, but never was it just a tricycle. To capture his illusions, I did a series of small sterling tricycles with my figure obviously fantasizing his play. When my child saw them, he remarked, "That's me." And of course, it was a reflection of his play. There is something universal in the pleasures of childhood and I wanted to capture that in my work.

For a variety of reasons, my next group of works involved air machines. The machines were primarily tricycles turned backward with a wing system and a propeller. There was usually a driver and always a hood ornament. I had a strong conviction that all air machines just like all cars should have hood ornaments. The power source for my machines was a hand crank on the rear of the propeller and tricycle pedals on the large rear wheel. My air machines were not aerodynamic, nor were they as well designed as DeVinci's. They were actually as devoid of an adequate power source as were his. However, if the driver could have pedaled and cranked like mad, who knows? Perhaps I made these machines unfit for flying because of my own aversion to it. I designed them so that my driver could safely hope without even really attaining his fantasy.

At the time I was making these pieces, our first astronauts were walking around in space. I could not help but think about man's ability not only to dream, but about man's ability to fulfill his dreams. From the Greek story of Iccarus, to DeVinci's serious drawings, to the Wright brothers first successful flight, was a relatively short period in the history of man, but the years between Kitty Hawk and the first walk on the moon was only a blink in the eye of time. What a marvelous ability God has given man — to make reality of his fantasies.

The transition that I made from my toys and jewelry scale objects to larger pieces took place over a six year period. I have always played with new ideas of form and mechanics while continuing my main production effort. In 1964, I made my first trip to the Metropolitan Museum of Art in New York City. That was a most enriching experience. It was gratifying to see works first hand that had previously only been viewed in photographs. After three days of viewing, I was most taken by the arms and the armor collection. My interest was not in the subject matter or in the historical review of offensive and defensive weapons, but in the material used. The use of ferrous metals on certain pieces was very exciting for I had never seen iron used in that way. I saw jewelry and holloware techniques most masterfully used to embellish iron. The rich use of this metal was beyond anything I had previously seen. The impressions of that viewing experience remained with me for a very long time. When I returned home I began informing myself about this material that I had never before given serious consideration. I read, interviewed several old blacksmiths who were still working in my area, and began experimenting with techniques. After much trial and error, I made a personal commitment to making objects in iron, using traditional blacksmithing techniques.

In 1968, I began my first serious works in iron. I worked on two pieces, both magnifications of earlier silver toys. They were air machines: one a 60" blow up of a 3½" helicopter, and the other a 60" interpretation of a silver machine that was a take-off on the classic folded glider. One piece had the traditional driver and hood ornament and the other was large enough for my children to supply the power. These were my first serious efforts. I was still learning blacksmithing forming, joining and embellishing techniques, so these works took eighteen months to complete.

You must realize that no other contemporary American craftsman was working with ferrous materials and traditional blacksmithing techniques at this time. Information was very limited. Few books had ever been written on the subject, and the only practicing blacksmiths that I was aware of were working in the agricultural community. Learning the mechanics of this ancient craft and interpreting it in contemporary terms was a slow process.

The plasticity of the material had the greatest attraction for me. Iron and steel in the cold state are by their very nature rigid and strong. However, when the heat of the traditional blacksmith's forge is imposed, they become remarkably plastic. Even to this day this plasticity excites me. By the time I completed the air machines, I was convinced that I wanted to devote my future as a craftsman to this ancient, but new media.

I do not consider myself a blacksmith in the classic sense, for I continue to do many things and to work in all metals. I made toys — but only at Christmas and only for my children. I make gold jewelry for my wife and copper cooking utensils for our kitchen. The children, although teenagers now, still look in their Christmas stockings for a toy. My wife enjoys wearing the jewelry I made, for I have learned to be selective, to subdue my creative instinct, and to make only what I know she will wear.

For reasons unknown to me at this time, I began making weathervanes, after completing the iron toys. I do know that I have always been attracted by wind moving objects. This fascination could have sprung from my heritage, for I grew up in the windy state of Kansas. Childhood memories are crowded with windmills and weathervanes dancing atop barns. Even the lightening rods in my state are accompanied by wind directed arrows. In 1968, I saw an exhibition of early American weathervanes and whirligigs at the American Folk Art Gallery. This was a joyful experience for me.

Whatever the reason, I felt compelled to make wind moving objects. These have taken many forms. The first pieces were for a playhouse I had built for my children. The playhouse was elaborate, with swings, sand box, Indian lookout, and mounts for weathervanes. The first six followed the themes of Iccarus and the angel Gabriel. I have since dealt with animal, human and super-human forms. I have made Iccarus flying the sun, and I have positioned Gabriel blowing his horn many times. All of these experiences have led to what I am doing now.

In retrospect, it is easy to discuss my past work and the motivations behind it, but I am at a loss when it is necessary to discuss the work I have been doing for the past four years. Perhaps it is all too immediate to discuss with perspective. What I am doing excites and stimulates me. I know that it is growing and progressing, but to what end I am not sure. At some point in the future I am quite confident that I will be able to discuss this present time, the forms and materials I am using. But for now, I am performing intuitively and responding emotionally to the materials in the workshop. Explanation will follow at some future date.

It is a worthwhile endeavor for any artist to communicate about his work with his audience and his critics. I applaud any artist who can do this easily, but I find it most difficult. My work comes from my depths and is an intuitive expression. I have recently executed a series of wind moving objects: pieces that started as weathervanes and have evolved into very sculptural forms. They ignore wind directions but ride playfully on it. They exist in the elements giving many views of line and form without revealing what their movements might be. I do not know where we are going but we will go there together.

AUTOBIOGRAPHY—ELENA GEE

"To earn a living I have been forced to compromise gradually with my one of a kind ideal . . . ."

Elena Gee, pendant, silver, tortoise shell, polyester resin, sapphires, lapis lazuli, pearls, 3" w

Originally from New Zealand, I have lived in Australia for the past eight years, and my work has been influenced by both countries. Like many craftspeople in this part of the world, I am largely self-taught because no training was available. There have been some advantages to this enforced self-reliance, but also many drawbacks. I feel that with more training I would have progressed further and been capable of more precise work. Even now, Australia needs more and better schools for jewellers, though I would not like to see them organized within the rigid academic system.

I was born in Auckland, New Zealand, and grew up in a small wine-making town on the western side. Vineyards and orchards stretched towards the hills on one side and on the other the small volcanic hills on which the city was built covered half the horizon. I grew up in an atmosphere of industry. My parents made the house we lived in, the furniture, clothes and much more. I automatically learned to use my hands. New Zealand is a windy, rainy country with a darkness which deepens all the colours. When I go back, my work seems closer in style to those jewellers who have appeared since I left, than to Australian work. It is a soft, curling style, with rich dark colours and fine details.

I left school at 18, having failed to matriculate and became a doctor's receptionist. It was during this year I first began making jewellery. I wanted to learn more about it, but there were no schools and few artist/jewellers in the country, so I took a job as a trainee with a firm of jewellers. Everything except casting was done on the premises, with a staff of tatooed ex-sailors who entertained each other with bawdy tales of their travels when the boss was out. However, making wedding bands by the score from a bar of metal did cure me of being inhibited for fear of damaging the materials.

The following year I immigrated to Sydney, and took different jobs for two years while making jewellery in the evenings. Once I was a window dresser. For a few months I worked in costume jewellery. This factory made, for demonstration purposes, the first body ornaments I had ever seen. I stored away the information.

Eventually, about six years ago now, I took the plunge and began living solely off my work. The following year the new Labor government began expanding the number of grants to artists as part of their new arts policy. I received a grant enabling me to make large pieces, using various materials. The recession, which was just then hitting Australia, was blunted for many craftspeople, by these grants. It was a time of great excitement in the arts. Everyone seemed inspired and there were marvellous new exhibitions. My second one-woman show at the end of that year featured several large body ornaments. My pieces were all constructed then—hollow or filled. I deliberately avoided using wax until I had first learned to make any shape I might need in metal. Wax work looked too much like a crutch. I used different materials: stone, beads, old glasses, badges, leather, bone. It was not until I returned to New Zealand and saw old portraits of Maoris with dark feathers in their hair that I began using feathers, in natural shades.

That year I also started teaching two classes a week at an arts centre, with up to ten students in a class. Some good work was produced in the classes, but after two years I gave it up as I was not really cut out for teaching. I would prefer to teach just one person who is really interested because I did find it clarified my own technical problems.

Recently, my work has become smaller and more complex. With greater skill I can now exercise my imagination in finer detail. The big pieces were an interesting experiment but seem useless to me now. It was a phase I needed to go through.

To earn a living I have been forced

"My parents made the house we lived in, the furniture, clothes and much more, so I automatically learned to use my hands."

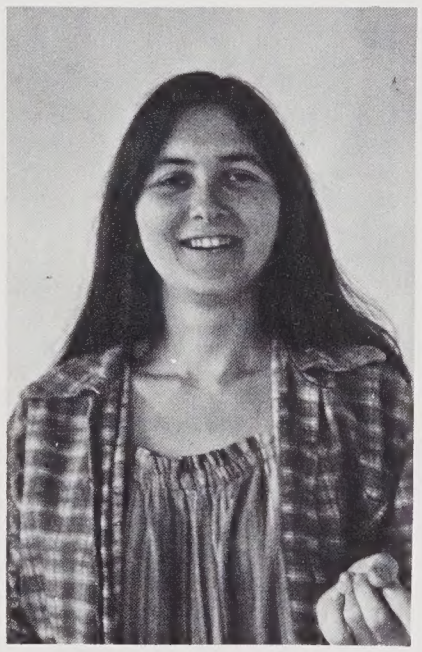
to compromise with my one-of-a-kind ideal by having small rings and components cast and then assembling them in different ways. This produces almost unique medium priced pieces which are sold in a number of galleries throughout Australia. This saves my time for more special pieces and makes the masters good practice work. It also means that people of average income can afford to buy my pieces. I am not fond of a pedestal attitude towards jewellery and would rather it were not used.

Two years ago I had a third exhibition and experienced difficulty in finishing the work. Each piece of exhibition level is becoming so time consuming that it takes two years or more of solid work to produce a show, and I have to earn a living as well. I would prefer an exhibition shared with people doing similar work.

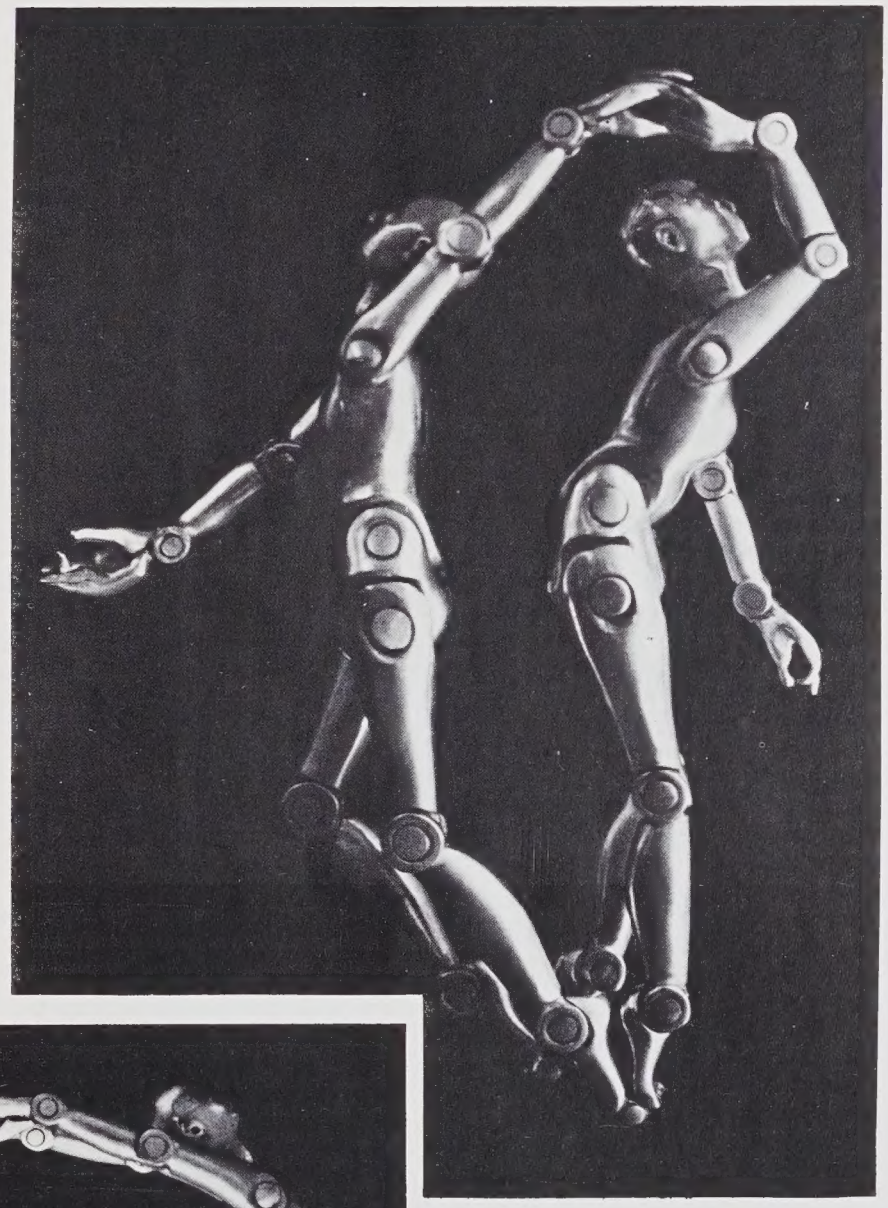
Last year I moved to Brisbane in Queensland, the northern state, following the sun. Here the sky is hot and pale and the city slightly tropical looking. I have also begun carving stones, mostly quartz and lapis lazuli, using jewellery equipment and diamond bits. These carvings look quite beautiful set with other stones in pieces especially designed.

From reading Cellini I have discovered repousse and chasing as a way of making human faces and figures. It seems to have unlimited possibilities for working in the round. I have been making chased mermaids in the renaissance style with pearls for breasts, golden hair and stones just for fun. The renaissance was an age of exploring unknown territory somewhat like our own. I love the jewellery of that time. I guess mermaids were future fiction for their day of sea exploration, and more attractive than our microbes on Mars.

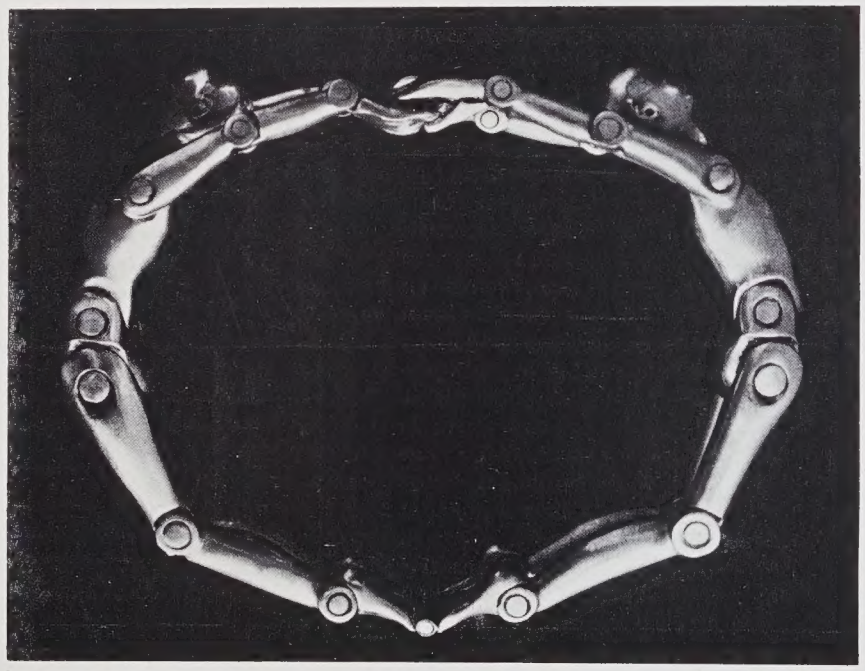
Some of my inspiration comes from science fiction writings and illustrations. I am interested in how societies work, and the dynamics of their interrelationships. In my work I try to express the feel and form of an internal work of memories, dreams, ideas, and hopes that we all carry around in our heads, rather than the one we can see and hear. The difficulty here is to avoid falling into pure fantasy; all form with no substance. Even a piece of jewellery should be logical. Now one design seems to flow from the other, but I hope it will never become too easy.

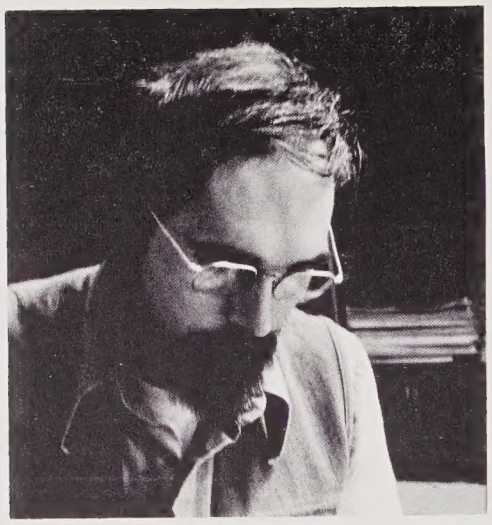


Elena Gee



Elena Gee, bracelet "dancing" silver





"The pride and joy from seeing a student succeed, is similar to the satisfaction from finishing a piece of art that functions well."

JOHN FIX
AUTOBIOGRAPHY

When I introduce myself to people in the community, I introduce myself as a teacher at Towson State University; but when I meet other artists and craftsmen, I introduce myself as a goldsmith. Writing this article has forced me to focus on the joys and frustrations of the dichotomy of being both artist and teacher. Despite occasional conflicts in leading this Jekyll-and-Hyde double life, I believe the rewards from both outweigh the problems. A teaching career has provided the income and time I need to continue my creative search as an artist.

Frankly, this career — and this search — were rather unexpected. I entered Ohio State University hoping to become a veterinarian. But when I took a required art course during my sophomore year, I discovered a latent interest and ability in art. Consequently, I left Ohio State holding a BFA degree with a major in sculpture and instead of heading for veterinary school, I headed for Cranbook Academy of Art.

In retrospect, what has stayed with me from Cranbrook are some good friends and an understanding about metal as an avenue of expression. My teacher, Richard Thomas, had the ability to encourage exploration and self-reliance. Under his tutelage I came to realize that I prefer creating functional objects rather than purely sculptural form. I also learned that craftsmanship or technical skill are means to an end not ends in themselves. In addition I came to realize that an artist has the freedom to experiment with technique as well as ideas.

When I graduated from Cranbrook in 1966, several teaching jobs were available. Since the craft boom of the '70's was not yet on the horizon, I figured that making a living as a craftsman was a long gamble. I opted for teaching.

My first job meant teaching art appreciation, art history, and basic design at Alabama A&M College in Huntsville. While living in Huntsville, I met and soon married Dorothy Neblett who was then teaching painting at a small college nearby. Since our marriage, Dorothy has become involved with the fiber arts and now teaches screen printing, dyeing, and fabric design at Towson State. I believe both of us feel that having an artist as a spouse has made a positive difference in our lives. We do not compete, partly because our media and styles are so different, but each of us seems to appreciate, complement, and even stimulate the other's creativity. And both of us understand the frustrations that result from erratic work habits, pressure deadlines, technical and design disasters — all the special kinds of frustrations peculiar to artists and crafts people.

August 1967 brought a new job as well as a new bride. I started my present teaching job at Towson State University in Baltimore. Towson State is a liberal arts institution with an enrollment of about 10,000. I was hired to expand the curriculum in the areas of crafts. Most of my energy the first few years went into building and teaching new courses in jewelry, metals, weaving, and fabric design. The program has grown to the point that specialists now handle each medium and I am able to concentrate on jewelry, metalsmithing, and enameling courses. Most of my students take Jewelry I as a required crafts elective; only 20 to 25 percent choose to continue their studies in metal for a second or third semester. As a result, much of my current teaching deals with rather basic introductory material.

The past 12 years of experiences and observations have led me to certain personal conclusions about teaching, about art, and about teaching art. It's easy to discourse on problems in today's higher education: low salaries, few promotions, inadequate budgets, and student apathy, ability, and preparation. I would rather discuss rewards that many of us take for granted and, indeed, keep us in the teaching profession. Whatever the financial position of the college art teacher, the salary does provide a steady income and those of us lucky enough to have tenure have a measure of job security. Both these elements have provided a base for my own work as an artist/craftsman. But in addition to these rewards, I am aware of other non-monetary ones.

I must explain that I really do enjoy teaching and feel a satisfaction in helping other people learn new skills and gain new insights. If one is receptive, teaching and learning is a two-way street. I gain from students' experiences, personalities, and ideas. I also enjoy contact with the up-coming generation of artists and I have profited greatly from lasting friendships with students. The pride and joy from seeing a student succeed, is similar to the satisfaction from finishing a piece of art that functions well. Being in the position of responsible "know-it-all" has forced me to expand my own knowledge of various techniques and current trends.

Teaching requires me to teach "how-to" techniques; it also provides a soap box. Hopefully, it gives me a chance to instill certain positive attitudes in my students. Students often remark on how much more aware, appreciative, and discriminating they become in regard to jewelry, in particular, and handmade objects, in general. I hope they also become more demanding of themselves in regard to craftsmanship. What I really hope is that a general caring about quality and striving for perfection will carry over into other facets of their lives. Personally I am very concerned about our disposable society and a lack of accountability in large sections of our work force. What I wish for, to somehow counteract this trend, is a gradually increasing insistence on quality by all of us. For that to happen, people have to become aware of what quality is.

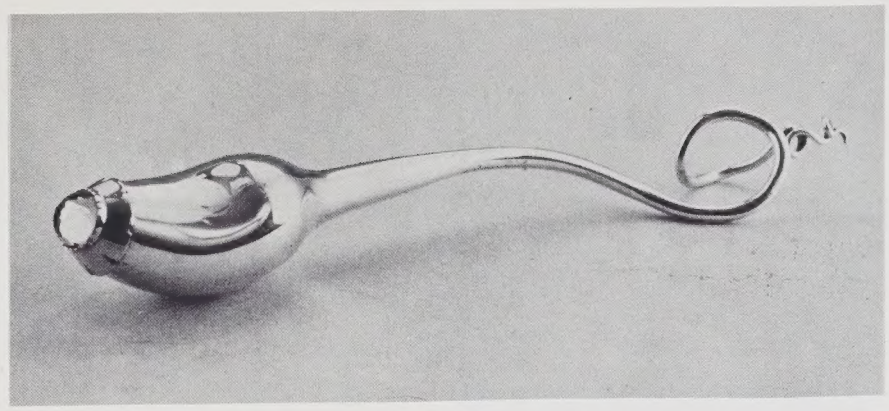
I also want to use my influence to make this instant-answer TV generation more patient. I want students to recognize that skills and knowledge of a craft cannot be spoonfed and then digested overnight. Throughout much of our education, we have come to expect the teacher to supply all the answers and provide all the inspiration. The student somehow expects only to plug in the parts of the puzzle and get "art." I want my students to figure out that learning any art or craft takes years. Indeed, it is a lifelong endeavor. I don't believe a teacher should impose his prejudices on others. But still I hope that, under my influence, some students will discover the joy of working with metals and then continue to investigate jewelry/metal as their own medium for artistic expression.

Perhaps the biggest reward of a teaching career is free time. Especially during vacations, I have time for my own creative work. In effect, one part of my double life makes possible the other. The university's insistence on continued research and publication encourages personal investigation and artistic production. Generally, what occurs in my studio is shared in the classroom. I see no conflict of interest here. Again, one part of my double life is shaping the other.

Though teaching frees some time for my creative work, the time is never enough. I suppose, as an artist, my biggest frustration is lack of time in the studio. My work schedule is generally sporadic and fits in around school and other commitments —like fishing. However, I do manage some time each week to work in my studio at home. I suspect, like many others, I work best under pressure of an upcoming show and client demands. For the past few years, I have been kept busy with commission work, including liturgical objects as well as jewlry items. There is real satisfaction in doing work for clients who cherish the objects I produce.

I have always enjoyed problem-solving and generally enjoy designing and working within certain limits. For example, in doing commission work, I must consider function, scale, budget, meaningful symbols, and of course, the client's personality and taste. A great advantage of doing commission work is that the requirements change with each new job. I find the repetition of making similar production items is less challenging for me. However, I do produce some pieces to sell in several local and regional galleries.

"The quiet times in the studio are akin to spiritual experiences."



John Fix, "Pod Form " sterling, gold and citrine, 7" l, 1977

Because my work-time is limited, what I produce for gallery-sale is only a small number of one-of-a-kind pieces. Since the major source of my income is salary from teaching, I depend little on money from selling pieces that end up in galleries. This frees me from compromise, so that these pieces can evolve purely out of a personal desire to explore or create.

My best friend calls me a tinkerer. He is right. Many of the objects come about by happenstance. I just stumble onto an idea while fooling around. For example, the "pod form" pictured here is the 12th piece in a series that started out as an investigation into making whistles. Working first with copper pipe led to the need for large silver tubing. The forms themselves demanded tapered silver tubing. By then my interest had grown into shaping the tubes by raising and the use of small snarling irons, which I had to make, and then refining the form by planishing with the use of pitch. (By the way, I never did make that whistle!) The expansion of this technique has led to a whole new series of bracelets and necklaces that combine hollow and forged sections. I am quite taken with the large sectional changes and weight reduction that is possible with this combination.

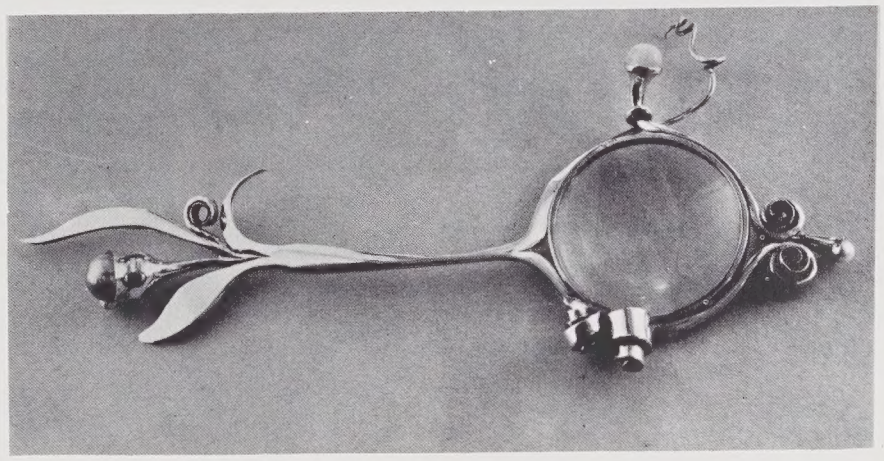
Ideas for other objects are motivated primarily by an interest in pure formal design relationships. I have long been fascinated by the work and ideas of artists like Brancusi and Mondrian. I find the simplification and idealization of form and the search for perfection of proportion quite a challenge. This interest in the perfection of abstract form has long been a consistent element of my work even though my interests and styles have changed over the years.

My latest work obviously is inspired by plant forms. This influence has come about as a direct result of my environment and lifestyle. Dorothy and I have lived in the country for the past ten years. Our previous house in the open meadow near a stream and our present house in the woods have provided a great opportunity to observe nature every day and to become familiar with a wide variety of local flora and fauna. In addition, our gardening and my preoccupation with fishing have made us aware of growth and life cycles along with seasonal changes.

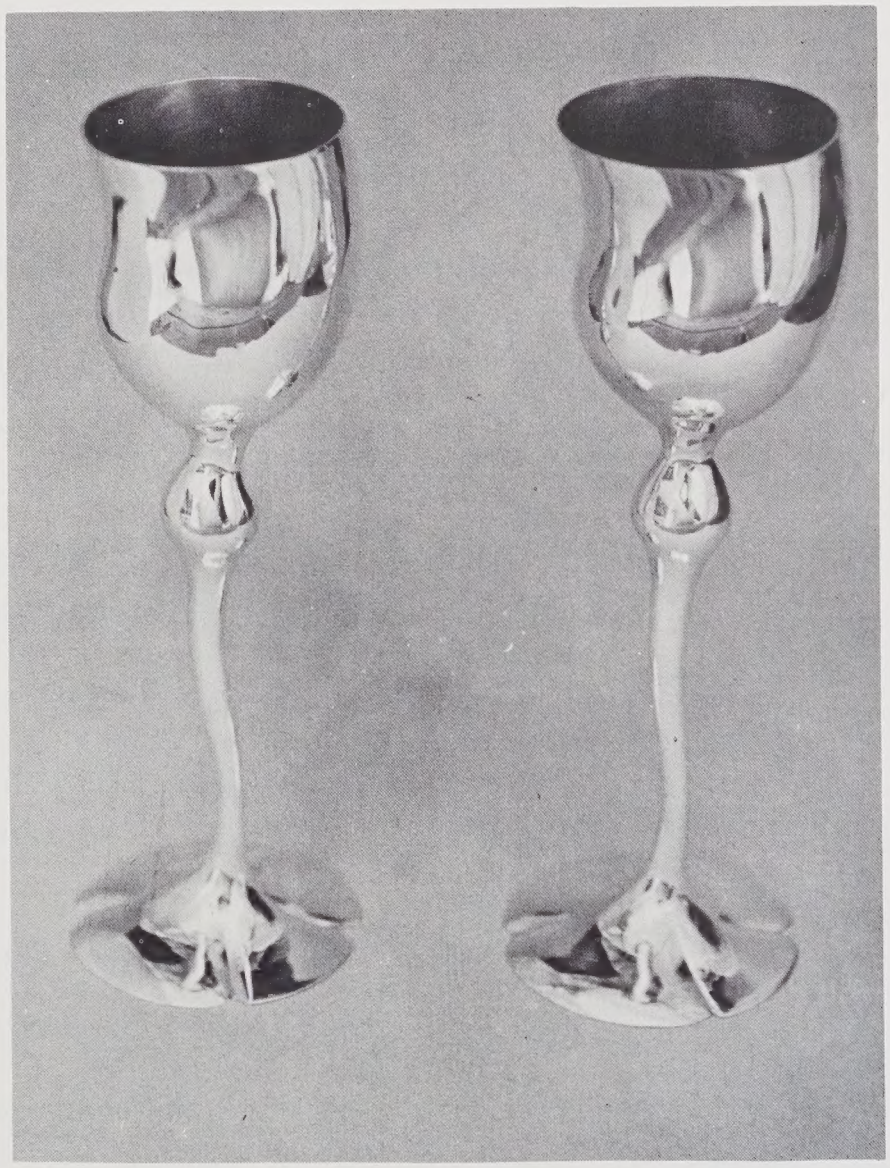
When working for myself, I work spontaneously — often without a design. I start forging and just watch the object evolve. The unpredictability of this evolution is quite exciting and perhaps the closest I've come to pure inspiration in the creative process. Working in this fashion has been a source of great joy. The quiet times in the studio are akin to spiritual experiences. I believe it is the artist's function to be sensitive to the material and let it direct him or her. Please understand that I'm not advocating a lack of planning or discipline in the craft. It's just that, after 15 years of working with metal, technique is no longer a major consideration for me. The longer I work within the craft, the more I come to realize that what is important for me is the process, the doing, rather than the technique or the object itself.

At this point, I can imagine many readers shaking their heads and grumbling about ivory towers and a head in the clouds. Well, it seems to me that each of us must question our role — be it teacher, artist, production craftsman, or whatever. Through a very conscious decision, I have chosen to be an artist/craftsman and to make a few very personal objects with as few compromises as possible. In my view, in today's increasingly impersonal society, the role of craftsman has changed from the traditional one of maker-of-things for physical use to creator-of-objects that are personal and meaningful to the maker as well as the user.

The artist in me seeks the joy of making those meaningful objects; the teacher in me seeks a chance to show other people how to experience that same kind of joy.



John Fix "Magnifying Glass," sterling, moonstone and pearls, 7" l, 1976 (top)



John Fix, "Hobbitt Gobletts," sterling, 7" h, 1978

(all photos by Mark Habicht)

EDITORIALS

EDITOR'S NOTE: Because of the variety and nature of the Letters-to-the-Editor, SNAG and the Goldsmiths Journal cannot verify or be responsible for the material these letters may contain. It is therefore suggested that you carefully analyze and verify all information herein. We will consider publishing responsible letters which refute any information we publish.

Dear Editor,

The Nova Scotia College of Art and Design offers numerous courses in the various craft fields, whereby the students explore the technical requirements and artistic potentials of the craft. There is a strong desire among many of our students to further their skills through assisting or apprenticing to an established craftsman. Often, however, they do not know which craftsmen are willing to take on students as assistants or apprentices.

Under the existing Off-Campus Program, which is administered by this office, students may study away from the campus either independently or at another institution. Credit is awarded by the supervising faculty member after the student has successfully completed the project.

We would like to include apprenticeships under this program. We are presently researching apprenticeships and would appreciate any advice you have to offer, particularly pertaining to the craft that your organization is involved with.

We are specifically interested in contacting those craftsmen who are working professionally in their fields.

Thank you very much for your time and consideration.

Patricia Snow, Director, Off-Campus Services, 5163 Duke St., Halifax, Nova Scotia, Canada B3J3J6

Dear Editor,

With reference to Mr. McCrary's article on the inexpensive wax injector, I would like to make a contribution regarding the method of pressurization. Instead of a compressor, we use a 15 pound can of Freon, available from refrigeration supply houses. Freon is the choice because a wax injector requires simply pressure with practically no volume. The gas is clean, non-toxic, noiseless, and inexpensive. Since it delivers 70 PSI at room temperature, a regulator must be fitted. A 15 lb. can of R12 at $20 should last the average jeweler a very long time. The smaller size cans used to power airbrushes may also be used.

Harold Wood
Electro-Arts Co.
Portland, OR 97240

Dear Editor,

A few more words you might find of interest for the Journal.

Even the toxic effects of cadmium have received more publicity recently, specific brazing (hard soldering) alloys containing it have not. Many years ago, I inquired from the Industrial Commission of Ohio Division of Safety and Hygiene for any information pertaining to this. I received the enclosed list compiled by the American Welding Society (AWS) and the American Society for Testing and Materials (ASTM) in 1966. Recent inquiries from gold solder manufacturers brought little cooperation and the American Society of Metals could not supply a list without an expensive computor search. Even then, there was no guarantee one even exists. With the help of a fellow goldsmith, Chris Kramer, gold solders in our possession were submitted to the Ohio Division of Safety and Hygiene for testing. We hope to have their report in the near future for publication. Every state has this service and will gladly forward any information they have, on request.

Vada Beetler

Dear Editor,

Does anybody have an idea where the market place is for a chalice and paten. I also have a morse (a priest's cape clasp) which I would like to show in an appropriate gallery.

Any help is appreciated.
Toni Snyder
Box 304, Audubon, PA 19407

Dear Editor,

Evans Brothers has commissioned a book on gems and jewellery from Mr. R. L. Austen, B.Sc., F.G.A., F.S.V.A., director of the highly respected firm of jewellers of the same name in Chichester. The book will be published next year, and will be lavishly illustrated in colour.

We are anxious that the illustrations should reflect top-quality international jewellery design, and we therefore wondered whether your organization had any transparencies of modern pieces of jewellery which make use of precious stones and metals, designed and made in the United States, which you would be prepared to lend us?

Naturally, we will take great care of any colour transparencies you lend us and will return them to you as soon as we have finished with them. A full acknowledgement to your organization would, of course, be given in the book.

I attached an information sheet about the book, and hope that you will be able to help us.

Anne Dewhurst, Assistant Editor
Evans Brothers Ltd., Montague House, Russell Square, London WC1B 5BX, England

(Editor's Note: It is suggested that interested members contact Ms. Dewhurst on an individual basis—see below for details.)

THE JEWELER'S ART
by R. L. Austen

Jewellery, especially jewellery wrought with skill and artistry from some of the world's most precious materials, is a topic which exercises a perennial fascination, whether one owns it oneself or merely gazes through the glass cases in shop windows or museums.

In this entertaining and informative book, the author, himself a Freeman of the Worshipful Company of Goldsmiths and Managing Director of a long-established firm of jewellers, gives first a brief outline of the history of jewellery. In simple, non-technical language he goes on to describe the structure of crystals and the phenomena of dispersion and absorption which govern the ways in which gemstones are cut, and takes the reader step-by-step through the processes of cutting and setting a gem. Then, chapter by chapter, he discusses the topics of precious metals, diamonds, other precious stones, pearls, semi-precious stones and other materials used in jewellery, describing how and where such materials are found, how they are worked, the range of size and colour they may be found in, how quality is judged (and priced) and the lore that surrounds them. There is, too, a chapter on imitations, pastes and synthetic gems.

The book will be lavishly illustrated in colour, and will include not only breath-taking examples of the jeweller's art from the past, but also the work of some of the most excit ing of today's designers and craftsmen, throughout the world. Firms who have contributed photographs for the book include the Diamond Corporation of London, Van Cleef and Arpels of Paris, Gubelin of Switzerland and Messrs H. Winston of New York.

Dear Editor,

. . . concerning the 4th Biennale Internationale at Limoges, France, sponsored by the President of France. . .

November 3, when I went to pick up my original works of art from the French exhibition, the customs official told me I would have to go through a broker which DOUBLES my shipping expenses. The catalogue which has no price listings of this exhibition was shown, besides the export bill with $1,000 insurance value, and also the shipping invoice copy. This was a museum art exhibition and not a commercial enterprise. The freight return charges were $91. For the self-supporting artist/craftsman who already had had my wings clipped several times because of California Proposition 13, this is a real mountain. I have enameled for 30 years, and I take pride in being a good U.S.A. representative as an artist/craftsman, and I cannot understand why the customs laws should punish me for exhibiting internationally. . .

Kay Whitcomb

ORGANIZATIONAL NEWS

PRESIDENT'S COLUMN

Some SNAG activities understandably underwent a slow down during the hectic holiday season, but are picking up now that everyone is returning to more normal schedules. I hope your winter holidays were full and joyous.

The office has received a few complaints about the change in handling the membership information and dues structure; we wish they might also contain suggestions. It has been mentioned in the past, but may bear repeating, with our expanding membership, we simply could not continue with the former records-keeping system. It was failing us as we could not keep up with the change of addresses and billing. Getting our list onto a computer has not been a smooth transition either, but after many hours of work by Bill Neumann and his wife Marty, and several form letters sent out to various segments of the membership to clarify questions found in records, we are starting to get the best of it. Of vital importance now, is that you notify the office of any change of address — in advance of your move, please — so that we can keep information current and flowing.

Remember that there is a committee reviewing our By-Laws. If you have suggestions as to areas needing attention, please forward them to: Marc Paisin, 2710 Haste St., No. 1, Berkeley, CA 94704; Richard Mawdsley, 104 Lynne Lane, Carterville, IL 62918; or Bob Mitchell, 1817 Colonial Rd., Jonesboro, AK 72401.

SNAG has started to receive requests from high school guidance counselors for some literature on the profession of goldsmithing. At present, we have nothing we can send except a copy of the Journal. I would like to ask if there is anyone out there, familar with the type of information which would be most helpful, who would be willing to work with us in putting something together with which to respond to future requests. Please contact me if you can help.

Work is progressing nicely on the Boston conference, April 19-21. The fall board meeting was held in the Bradford Hotel so that facilities could be examined and thus facilitate planning. I think you will enjoy the Bradford; it is an older hotel with a lot of character, most conveniently located to the various joys of Boston.

With the theme, "Historical, Traditional, Contemporary," a full and diverse program is being planned. We will keep you running this year, by bus and Boston subway. Two technical presentations are scheduled and we are most pleased that they will both be the results of current research done by graduate students at two of the U.S. outstanding university programs. Practical and academic research into "Ancient Forge Joining Techniques," including forge welding of steels, diffusion joining of nonferrous metals for Sheffield plate and the Japanese mokume gane, and the fusion joining of granulation will be presented by Phil Baldwin, Steve Brunst and Marvin Jenson, studying at Southern Illinois University at Carbondale. Joseph F. Hall, graduate student at the University of Washington, Seattle, will present "Metal-Arts Applications of the Refractory Metals—Titanium, Zirconium, Hafnium, Niobium (Columbium) and Tantalum." Also, in response to interest generated by last year's "Business of Being a Goldsmith" panel and member suggestions, a panel discussion on designing for the trade is being planned. Book and supplier displays, slide showings and many opportunities for informal discussions with colleagues promise to make this another great three days. COME ONE, COME ALL, AND SNAG IT TO BOSTON!

Mary Lee Hu
Art Department
Michigan State University
E. Lansing, MI 48824

SOCIETY OF NORTH AMERICAN GOLDSMITHS

ANNUAL CONFERENCE

BOSTON, MASSACHUSETTS — APRIL 19-21, 1979

"SNAG IT IN BOSTON . . .

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The conference will feature -- "hands on viewing" of a special collection at the Boston Museum of Fine Art -- a tour of Reed & Barton or the Jewelry Institute -- a panel of young designers -- open house at the Museum School, Boston University/PIA, Massachusetts College of Art — two technical papers — special lectures -- Jonathan Fairbanks, curator of American Decorative Art, Boston Museum, will speak on "Museum Attitudes Toward Collecting Contemporary Crafts."

Registration Fee: $50, Members — $65, Non-Members, $25, Non-Participant

Conference Site: Hotel Bradford, Boston, Massachusetts

For information on registration, write:

George McLean, 54 Stony Brook Road, Westford, Massachusetts 01886

NEW MEMBERS

We welcome the following new members to SNAG:

ASSOCIATE MEMBERS
Colette, Mill Valley, CA
John Mason, State College, PA
Elsie Ginnett, Canoga Park, CA
William Parsons, Alexandria, VA
Tom Mercer, Grass Valley, CA
Cynthia Reed, Hopewell, NJ
Rachel Bartling, Laguna Niguel, CA
Frances Strayer, Center Sandwich, NH
Doris Sutton, Richmond, VA
Carol Reece, Handcock, MD
Laura Popenoe, Stinson Beach, CA
George Murray, San Diego, CA
Claire Pfleger, Milwaukee, WI
Leslie Blackington, Seattle, WA
Muriel Peters, Staten Island, NY
Kristen Sommer, Fallbrook, CA
Yvonne Cupolo, Rochester, NY
Margaret Kaczala, Somerville, MA
Barbara Hall, Virginia Beach, VA
Richard Davis, Lynnwood, WA
Margot Neugebauer, New Bedford, MA
Vitti Artisans Gallery, Upper Montclair, NJ
Eileen Curtin, Saline, MI
Ronald Gripe, Colorado Springs, CO
Kum Park, Camarillo, CA
Evander, Preston, St. Petersburg, FL
E. Dane Purdo, Appleton, WI
Paul Taylor, San Francisco, CA
Suzanne Vanderbilt, W. Bloomfield, MI
Darleen Fleury, Le Mesa, CA
Robin Gallardin, New York, NY
Joella Malick, Allenwood, NJ
Marguerite Sadler, Bronx, NY
Sigrid Vollerthun, Washington, DC
Aleicia Woodrick, Ada, MI
Joel Achtenberg, St. Louis, MO
Merrill Ainsworth, Santa Barbara, CA
Frederick Crane, Woodburn, IN
Carol Fleischer, Indiana, PA
Rob Greene, Marshfield, VT
Gail Goldman, Arlington, VA
Richard Kelly, Phoenix, AZ
Steven Kolodny, Nassau, NY
Amerinda, Berkeley, CA
James Avery, Kerrville, TX
Leta Bryan, Wiggins, MS
Anne Bushart, Chevy Chase, MD
Theodore Drendel, Chicago, IL
Matthew Grant, Brighton, MA

STUDENT MEMBERS
Harriete Berman, Elkins Park, PA
Sylvia Dolson, Stow, OH
Peggy Eng, Arlington, TX
Anne Clark, Pilot Mound, IA
Linda Wood, Allston, MA
Elizabeth Garrison, Tallahassee, FL
Jack Route, Cross Plains, WI
Teruko Miller, El Cerrito, CA
Susie Robbins, Farmville, VA
Velta Karlsons, Rochester, NY
Margie Lutz, Omaha, NE
Ronald Schnur, Burlington, VT
Rebecca Hartle, Akron, OH
Joan Tautkus, Abington, MA
Bonnie Josselson, Pasadena, CA
Barbara Deal, Knoxville, TN
Blair White, Johnson City, TN
Heidi Engman, Chocorua, NH
Jane Koplewitz, Charlotte, VT
Paula Dinneen, Winchester, MA
Barbara Crocker, N. Adams, MA
Netta Gisnet, Des Moines, IA
Gary Santagata, Brooklyn, NY
Sandy Kelly, Playa Del Rey, CA
Mark Bartlett, San Jose, CA
Peter Handler, Rochester, NY
Correen Kaufman, Del Mar, CA
Joseph Pastore, Santa Crux, CA
Barbara Shapiro, Oxford, OH
Tina Bousquet, Venice, CA
David Sykes, Ontario, Canada
Alice Vinograde, Tempe, AZ
Albert Alfasso, Northridge, CA
Jane Ilger, Los Angeles, CA
Mary Bodenhamer, Tempe, AZ
Richard Beene, Terre Haute, IN
Jon Williams, Grand Pullman, WA
Margi Scharff, Sandia Pk, NM
Cheryl Hauck, Wolfeboro, NH
Elizabeth Bedford, Escondido, CA
Jayne Crewry, Sutton, MA
Marlene Gauthier, Marquette, MI
Diane Getty, Johnson City, TN
Sheri Havens, Oxford, OH
George MacFarland, Chula Vista, CA
Mark Morgan, Ann Arbor, MI
Brad Rake, Waukesha, WI
Henry DuPont, Greenville, DE
San Diego State U. Jewelry Students, San Diego, CA
Ann Kruzel, Livonia, MI
Carol Kumata, E. Lansing, MI
Marta Manning, Murray, KY
Michael Wattelet, Racine, WI
Gerald Griffin, Richmond, VA
Marion Lauifi, Van Nuys, CA
Joyce Naylor, Des Moines, IA
Cynthia Pardoe, Spring Valley, CA
Ronna Silver, Elkins Park, PA
David Somonick, Tucson, AZ
Matthew Parks, Oakland, CA

LIBRARY MEMBERS
Craft of W. Australia, Perth, W. Australia
Ontario College of Art, Toronto, Canada
Duncan Jordanstone, Dundee, Eng.
Alberta College of Art, Calgary, Alberta
York Community H.S., Elmhurst, IL
Metalworkers Guild, Lexington, MA
Visual Art Center of Alaska, Anchorage, AK
Spokane Art School Library, Spokane, WA
Ball State U., Muncie, IN
Calif. State U., Fullerton, CA
Sheridan College, Oakville, Ontario
U. of Wisconsin, Milwaukee, WI
East Carolina U., Greensville, NC
Friends of Art Metal, Madison, WI
Red Rocks Campus, Golden, CO
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MEMBERS' NEWS

Joseph Ordos spoke on "Gold and Silver Today: England vs. America" at the Permanent Collection Gallery, St. Paul, MN.

Hannelore Gabriel is exhibiting at the "Marietta College Crafts National '78." She also taught at Penland School of Crafts in Sept. Hannelore was featured in the Dec. issue of European Jeweler. She has also participated in the "Der Ring" competition at the Goldschmiedehaus in Hanau, W. Germany.

Jean Mandeberg contributed metal work to an invitational show "The Container" held in Dec. at the Cheney Cowles Memorial Museum in Spokane, WA.

Jim Cotter was represented in "Colorado Crafts: 17 Views" held at the Denver Art Museum.

Harold O'Connor conducted workshops/lectures at the following schools: Ft. Hayes State U., Hayes, KS; Mohawk College, Hamilton, Canada; Humber College, Toronto, Canada; Vermont State Craft Center, Middlebury, VT; U. of Vermont, Burlington, VT; Rhode Island College, Providence, RI; and Worcester Art Center, Worcester, MA. He had work presently in the International Competition entitled "Der Ring", an exhibit at the Deutsches Goldschmiedehaus, Hanau, W. Germany. His work was also on display at Craft Center, Worcester, MA in a group show entitled "Metal/Views."

Kenneth Bates, Margaret Fischer, Gretchen Foran, Pamela L. Pastoric, Mary Ann Scherr, Roberta Williamson, participated in "Artist Craftsman: An In-Depth Look" held at the Cleveland Institute of Art.

Paula Garrett exhibited metal (copper, brass and silver) containers and drawings at Allen St. Gallery during December.

Felicia Liban's cloisonne enamel jewelry is on display at the North Shore Unitarian Society Gallery at Plandome, NY, Feb. 4 to March 2.

Heidi Knipe was elected to the nominating committee of the Craftsmen's Advisory Board.

Deborah Moss-Marris participated in Craft Art 6, a National invitational exhibition at the Langman Gallery, Jenkintown, PA.

John Heller held a two-day participatory workshop on lost wax casting at the Greenwood Gallery.

Karen Gerstl exhibited her work in the opening show of "Art Latitude," a new fine art and craft gallery in New York City. She also had two sterling and 14k gold masks in "Wearable Art II," a show in Sign of the Swan Gallery in Philadelphia Show. Karen is participating in a group show at the Artisan Gallery in Great Neck, NY, Jan. 7-Feb. 16. She will be exhibiting at the Baltimore Winter Market, and she is one of six artists who will be jurying the Festival of American Crafts, to be held at the Lincoln Center in NYC in July.

Lois Etherington Betteridge was elected to the Royal Canadian Academy of Arts.

Heikki Seppa gave a slide demonstration workshop as part of a two-month cultural program at Ohio State University.

Robert Ebendorf had an exhibit of his jewelry at the Craft Shop in N.C., sponsored by the Piedmont Craftsmen, Inc.

Pamela Harlow won 2nd prize in Enamel Guild: West, 1978 Juried Membership Show in Los Angeles.

Hiroko Sato Pijanowski is now teaching at the U. of Michigan in Ann Arbor and has instituted a M.A. and M.F.A. program in metalwork and jewelry design to begin in the fall of 1979.

Chuck Evans, John Fix, David LaPlantz, Deborah Nore, Harold O'Connor, John Rotter and J. Fred Woell all participated in "Metal/Views" at the Craft Center.

Alan Feinstein won 1st prize metals at "Craftsman 78" at Philadelphia Civic Center Museum, the slide of winning brooch 24k gold plated silver, 14k gold, ivory and garnets. His next exhibit is Jan. 15-March 3, "Plastics/Fibers," Walnut St. Theatre, Philadelphia.

Marcia Lewis reports that Long Beach City College was given $15,000 toward the purchase of a T.I.G. welder by the Alcoa Foundation. This is the beginning of an effort to bring aesthetics into a heretofore vocational and technical approach to joining metals.

Daniella Kerner, Alan Feinstein, and Thomas Mann are participating in "Plastics/Fibers" at the Walnut St. Theatre Galleries in Philadelphia.

Gayle Saunders held a workshop "Marriage of Metals and Laminations" at the Summit Art Center.

Cecil Herring was written up in the publication "Plating and Surface Furnishing," the Journal of the American Electroplaters' Society.

Alma Eikerman is one of the ten craftsmen who have been selected as 1978 Fellows of the American Crafts Council for their outstanding contribution to crafts in the U.S.

Jamie Bennett will hold a three-day workshop in the design and technical problems when working with enamel on fabricated pieces at the Greenwood Gallery.

Arline Fisch was re-elected as a Vice President from North America to the World Crafts Council.

Helen Williams Drutt made a presentation at the "19th Midwest Antiques Forum" at the Henry Ford Museum in Dearborn.

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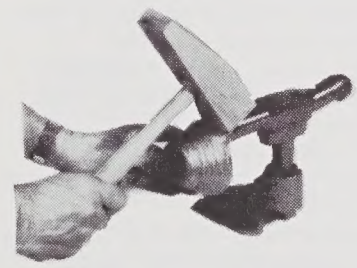

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BOOKS CONCERNING METALSMITHS IN PRINT

available at 30% SNAG discount from SNAG Book Club

The Art of Making Jewelry, Takashi Wada, Van Nostrand Reinhold, $10.95.

Beginning Jewelry Notebook, Roger Armstrong, Kendall-Hunt Pub. Co., $5.95.

Basic Metal Finishing, J.A. Von Fraunhofer, Chemical Pub. Co., $16.50.

Centrifugal or Lost Wax Casting for Schools, Tradesmen, Craftsmen, Murray Bovin, Bovin, $8.95 paper, $12.95, cloth.

Chicago Metalsmiths, Sharon S. Darling, U. of Chicago Press, $12.95.

Color Encyclopedia of Gemstones, Joel E. Arem, Van Nostrand Reinhold, $35.00.

Contemporary Crafts Market Place, compiled by American Crafts Council, R.R. Bowker Co., NY, $13.95.

Contemporary Jewelry, Philip G. Norton, Holt, Rinehart, Winston, $8.95 paper, $15.95 cloth.

Creative Casting, Sharr Chaote, Crown, $8.95.

Creative Gold- and Silversmithing, Sharr Chaote, Crown, $5.95.

Creative Jewelry Techniques, Harold O'Conner, Dunconnor, $7.50.

The Creative Lapidary, Frank W. Long, Van Nostrand Reinhold, $13.50.

Decorative and Sculptural Ironwork, Donna Z. Meilach, Crown, $7.95.

The Design and Creation of Jewelry, Robert von Neuman, Chilton, $6.95 paper, $12.50 cloth.

Form Emphasis for the Metalsmith, Heikki Seppa, KSU Press, $9.50.

Handcrafting Jewelry, Design & Technique, William Garrison & Mere E. Dowd, Regenery, $14.95.

Handmade Jewelry Techniques and Design, Alison Richards, Funk & Wagnall, NY, $12.95.

An Illustrated Dictionary of Jewelry, Anita Mason & Diane Packer, Harrow, $12.50.

Indian Jewelry Making, O.T. Branson, Treasure Chest Pub., $4.95.

Indian Silver Navajo and Pueblo Jewelry, Margery Bedinger, U. of NM Press, $15.00.

Inventive Jewelry Making, Ramona Solberg, Van Nostrand Reinhold, $8.95.

The Jeweler's Bench Reference, Harold O'Connor, Dunconor, $8.95.

Jewelry Making, Greta Pack, Van Nostrand Reinhold, $8.95.

Jewelrymaking for Schools, Tradesmen, Craftsmen, Murray Bovin, Bovin, $8.95 paper, $12.50 cloth.

Jewelry Repair Manual, R. Allen Hardy & John Bowman, Van Nostrand Reinhold, $7.95.

The Making of Tools, Alexander Weygers, Van Nostrand Reinhold, $8.95, $5.95 paper.

Metal Alloys and Patinas for Casting, William S. Shearman, KSU Press, $4.50.

Metal Enameling, Polly Rothenberg, Crown, $8.95.

Metal Design & Technique, Wilhelm Braun-Feldweg, Van Nostrand Reinhold, $30.00.

Metal Jewelry Techniques, Marcia Chamberlain, Watson-Guptill, $12.00.

Metalsmithing for the Artist-Craftsman, Richard Thomas, Chilton, $9.95.

Metal Techniques for Craftsmen, Oppi Untracht, Doubleday, $19.95.

Modern Jewelry, Irena Brynner, Van Nostrand Reinhold, $8.95.

The Navajo and Pueblo Silversmiths, John Adair, U. of OK Press, $7.50.

New Design in Jewelry, Donald J. Willcox, Van Nostrand Reinhold, $7.50.

The Penland School of Crafts Book of Jewelry Making, John Coyne, Bobbs, $12.95.

Plastics for Jewelry, Harry Hollander, Watson Guptill, $16.95.

Practical Silversmithing & Jewelry, Keith Smith, Van Nostrand Reinhold, $12.95.

Primitive and Folk Jewelry, Martin Gerlach, Peter Smith, $9.50.

Principles of Electroplating & Electroforming, Blum, William & Hogaboom, George McGraw, $24.95.

Silversmithing: A Basic Manual, Nicholas D. Humez, Little, Brown, & Co., $6.95.

Silversmithing and Art Metal for Schools, Tradesmen, Craftsmen, Murray Bovin, Bovin, $12.50 cloth, $8.75 paper.

Step By Step Knifemaking, David Boye, Rodale Press, $10.95 hard cover, $7.95 paper.

The Story of Jewelry, J. Anderson Black, Wm. Morrow & Co., $29.95.

The Technique of Jewelry, Rod Edwards, Charles Scribner, $17.50.

Textile Techniques in Metal, Arline Fisch, Van Nostrand Reinhold, $15.00.

Tradition & Change, The New American Craftsman, Julie Hall, E. P. Dutton, $25.00.

PLEASE NOTE:

Contemporary Jewelry: A Critical Assessment 1945-1975, Ralph Turner, Van Nostrand Reinhold, $30, is no longer being published.

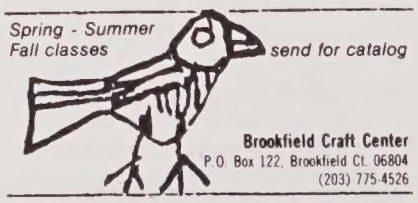
Modern Jewelry—An International Survey, Graham Hughes, Crown Pub. has been cancelled with no plans to reprint.

Molding and Casting, Carl Clark, Standard Arts Press, is not available at SNAG discount, but can be ordered directly from Standard Arts Press, Butler, MD 21623, for $15.00, plus 85 cents postage.

New Directions in Goldsmithing, Harold O'Connor, Dunconor, $7.50, has been replaced with:

Creative Jewelry Techniques, 105 pages, 24 color plates, 170 black & white, Dunconor, $7.50.

ABOUT ORDERING GERMAN BOOKS: The book department, both for American books and German books, is each an individual volunteer who shuffles a lot of papers but has no store or money, since the book department shows no profit. Therefore, the books are not in stock. They are drop shipped directly from the publisher. So please have patience with your orders for German books and the catalogues from the Schmuckmuseum — it can take 3 months for them to arrive!



BOOK CLUB

by Hannelore Gabriel

Reminder for group subscription of Goldschmiedezeitung-European Jeweler at 50% SNAG discount.

Ruehle-Diebener-Verlag, the publisher of Goldschmiedezeitung-European Jeweler, has offered us their magazine at $30 a year if we succeed in having 300 interested members. I have already started collecting names of people who want to be on the list. The 1979 conference will be deadline for this, but I urge you to please submit your name and permanent address now to facilitate the procedure. For those of you who are not familiar with the magazine, it will be on view with the display of German books at the conference. The subscription includes a flyer called European Jeweler Express Service, which is sent ahead of the magazine and written in English, listing important upcoming events such as international competitions.

When we have succeeded in getting 300 or more subscribers, the list will be sent to the publisher who will handle the billing. You can pay in U.S. dollars. Please do not take any action on your own.

FEATURE ARTICLES

CONCEPTS AND CONCEPTS STUDIO

by Doug Steakley

(presented at the 1978 SNAG Conference in St. Louis)

I am going to tell you about the working situation we have created at Concepts Studio in Carmel Valley and about our gallery — Concepts — in Carmel. In Carmel Valley I work with three other metalsmiths in a very effective and interesting combination of studio and retail shop. The environment that a craftsperson works in is probably the most significant factor in the quality of the work he or she produces. We have made an environment that is stimulating and encourages personal development. We hold weekly critiques where we show our recent work and the give and take discussions that follow reinforce our concern with growth and quality. Also the feedback that we give each other has done much to make us more open about ourselves and our work. At Concepts Studio we have a situation that is inexpensive, comfortable, well equipped, and most importantly we work with people that we care about and respect.

The gallery in Carmel is a separate entity where my wife Jackie and I exhibit well-designed contemporary jewelry, metalsmithing and a small number of other craft objects. I am going to approach the development of these shops chronologically to give you a feeling of how the ideas began and evolved, and where they might lead from here.

CONCEPTS STUDIO—PAST: First a little of my personal experience since this will give you an idea of where I am coming from and add continuity to the development of our studio and gallery. I began making jewelry about ten years ago and pursued it on my own for several years before deciding to attend a university. I went to a university for two reasons: to be around other people who were doing the same sort of work that I enjoyed and to be in an environment where time slowed down — allowing me to do pieces of jewelry without over-riding concerns of how much time they would take and how much I would be able to sell them for. These two considerations: being in the company of other jewelers and being in a "timeless" environment are still two of my major concerns and are an important part of the feeling at Concepts Studio.

In 1971 I went to Indiana University and graduated with an MFA degree in 1974. During the time I was in graduate school, I was involved in a fairly large, incorporated wholesale business. We set up a nationwide network of sales and opened a retail shop which still exists in Bloomington. Because of my divergent interests I sold my share of the business. While I was involved in manufacturing jewelry I was always trying to think of a way several persons could work side-by-side on a high level of intensity. I was in a shop where we hired employees and this was unsatisfactory to me because I had the stigma of being the boss and this type of relationship does not allow for a free exchange of ideas.

After graduating from Indiana, Jackie and I went to Denmark where I worked for several months in Hans Hansen's workshop studying holloware techniques. It was during this trip that our ideas about a retail shop/gallery crystallized. I had not seen a shop or gallery in the United States that inspired me the way that Hans Hansen's did. They placed a great deal of emphasis on attractive display and interesting merchandise, and in the town of Kolding their shop is as elegant as any I have seen in any large city. It was always a treat for Jackie and me to walk by and see their new window display which was changed every other Friday.

After returning from Denmark we moved to Carmel Valley and decided not to do anything for a year except look around and be certain that this was the area in which we wanted to live. We found the valley to be a quiet, semi-rural area that was culturally conscious and close enough to San Francisco that we could easily drive up in a couple of hours. So I rented a studio space and asked two of my students from an adult education class to join me. This made a large work area more affordable and we soon discovered other advantages of working in a group situation. The space was large enough to have a small retail area in the front and this was set up so that each person kept all the income derived from the sale of their work. After a few months one of the original persons left and two more joined our group, bringing it to a total of four. We have found that this is a comfortable number of people to work with.

CONCEPTS STUDIO—PRESENT: After less than a year at the original location, a larger space became available and we decided to move. By combining our talents and energies we were able to put together a very workable studio and retail space with a minimal financial investment; and it was an adventure for us creating a situation for which we had no model. In the new space we installed a sink with hot water, gas lines around the shop to each bench and began to acquire more equipment. Our shop is now very well equipped — we can do plating, casting, forging, have a steam cleaner, drill press, unimat, belt sander and many stakes and hammers. We have four different types of torches including a large gas and compressed air torch for holloware, and a hydraulic press based on the paper Marc Paisan delivered at last year's SNAG Conference. Each jeweler has about fifty square feet for his own bench and we have an Art Deco refrigerator, a safe, burglar alarm and nice stereo system. We have found that we take care of each other's equipment and we have no theft to worry about.

We moved into this new space at about the same time we were opening the gallery in Carmel so we were able to coordinate the color of the carpet and the design of the cases. Both of the retail areas have a similar feeling but we purposely located the studio in an area that is quiet and has low rent. And we chose similar names — Concepts and Concepts Studio — so we could take advantage of joint advertising and share other things such as business cards and boxes.

In our new space we began to feel a need to establish some sort of structure to our relationship. We did not want to be called a cooperative since this word has been overused, and we did not want to form a partnership. So we hired an attorney to come up to our shop for a question and answer session. He explained that we are an association, which is simply a group of self-employed individuals joined together for the purpose of sharing overhead and other common interests. Many doctors and attorneys set up their offices in this manner. With his assistance we drew up an Association Agreement which articulated our structure in the following way: I am going to read the headings and explain only the ones that are more complex:

1. Name of Association
2. Type and Purpose of Business
3. Location of Business
4. Profits and Losses
5. Books of Account—which states how the books are to be set up, who is responsible for keeping records, and that each member is responsible for his or her own taxes.
6. Expenses—
   (A) Monthly Operating Expenses: How these are shared and changed.
   (B) General Expenses: Aside from monthly expenses. These require a majority vote. Advertising is a good example.
   (C) Community Property: This is one of the more interesting categories since it allows us to jointly purchase equipment so that each person retains a share of the market value of that equipment and will be reimbursed should they decide to leave. We do encourage private ownership and resort to community property purchases only when no one wants to own the item we need — such as our large safe.
7. Membership in the Association—
   (A) New Members: Require a majority vote for a 90-day trial period and a majority vote at the end of the 90 days for full admission.
   (B) Withdrawal: Requires a 30-day written notice.
   (C) Expulsion: Requires a majority vote to place a person on 30-day probation and another majority vote to ask someone to leave.
8. Non-Competitive Agreement—If a person leaves or is asked to leave they shall not engage in a similar business for one year for a radius of eighteen miles.
9. Modification of Agreement—Requires a majority vote.

10. Operating Procedures—Day to day running and cleaning of the shop.

Basically the Association Agreement sets up a method for handling disagreements, finances and other decision-making processes. Everything is based on a majority vote. Within this framework we have worked out the details for running the shop on a day-to-day basis. For instance, we take turns being responsible for being in the shop. Since there are four of us and we are open six days a week, we average a day and a half a week that we each have to be in the shop. On your "day" you are responsible for cleaning the retail area, for taking the jewelry out of the safe and displaying it and for waiting on customers.

It would be unrealistic for me to gloss over the disagreements that have arisen in the past and that probably will arise again in the future, so let me say we have had our difficulties and have spent hours in discussions trying to resolve our differences. As a result of these discussions we have come to know each other well and have adopted a policy of giving the other person the benefit of the doubt. We now have a group where everyone feels secure and open. It has been important for us to work through these difficulties so we could get to the more important business of being productive and innovative metalsmiths.

Three out of the four of us rely on the incomes we earn as craftspersons. None of us have chosen to sell our work on a wholesale basis, although this would be a viable alternative.

Instead we are in the fortunate position of having the gallery in Carmel as a showplace as well as our own retail area in the valley. Also three of us design prototypes for manufacturing companies and receive a royalty income. I do not want to give the impression that we were overnight successes, but as we become established our incomes are increasing.

As a group we are able to draw from the various backgrounds of the members: Robin studied photography and jewelry at the University of New Mexico, Susan has a background in painting and liberal arts, and Rick studied painting and design at the Art Institute of Chicago. Also we are able to have many different types of experiences which we could not have if we were working as individual metalsmiths. Frequently we get together to show slides from exhibitions around the country and from various SNAG members. Recently we invited Alan Revere to our studio to conduct a stone setting workshop and had a local, European-trained jeweler come in and demonstrate the procedure for refining scrap gold and pouring ingots. Next year we will intensify these programs, perhaps by linking up with universities throughout the state so that when they have a guest lecturer we can invite him to our studio and vice versa. These experiences, and the advantages I have mentioned, all contribute to our group environment at Concepts Studio, which is affordable, stimulating and conducive to our individual growth.

CONCEPTS—THE GALLERY

INTRODUCTION: The gallery in Carmel exists as a separate, yet complementary, business from the studio in Carmel Valley. It is owned by my wife Jackie and me. We considered other forms of ownership, but decided that we preferred the simplicity and freedom of being able to make all of the decisions by ourselves. Jackie runs the gallery on a day-to-day basis, doing all of the bookkeeping, ordering, bill paying, etc., and the shop atomosphere largely reflects her personality.

We have been open a little over a year and as we get our feet on the ground financially we are changing the focus of the gallery. Initially we wanted it to be a showplace for my work and a place to sell the jewelry made by the people in the valley studio. But, as times goes on, we are developing plans to have three to four gallery exhibitions a year. Our first major exhibition will be this summer, featuring Contemporary English Jewelers. We have planned another exhibition in November with jewelry by Alan Revere and wooden boxes by Michael Graham.

FINANCES: Often shops and galleries run into difficulties with finances. We place a great deal of emphasis on survival — on simply staying in business. Therefore we are conservative with the jewelry we purchase, preferring to take experimental work on a consignment basis. We know we have a sound idea for a gallery and the next step is making this idea work. This usually means paying the bills on time. As a craftsman I have sold in many galleries and have had a variety of experiences in being paid — so I have a clear idea of how a gallery should be run from a craftsman's point of view. We established a policy from the beginning never to be late with a consignment check and that we would keep clear and accurate records of all craftsperson's work. I feel that these things are critically important because it is amazing how quickly a gallery's reputation circulates among craftspersons around the country.

It is very important to have a line of credit if you are planning to open a gallery or retail shop. The first advice I would give anyone considering a new business would be to establish a good working relationship with their local banker. When we first moved to Carmel I borrowed money on a short-term note to establish a credit rating. When I repaid that loan I immediately made a larger loan. I have made it a point never to be late with a payment and this has simplified my dealings with the bank. Banks earn their money through loans but they want to feel secure that their money is going to be invested wisely. (We have also found several sources of private financing — an approach that has some advantages.)

LOCATION: Location is another important consideration for a gallery or retail shop. Any large city is a good location and smaller cities are good if they can provide or attract sophisticated shoppers. Carmel has proven to be an excellent choice because it is located between San Francisco and Los Angeles, is a picturesque town to visit, and has a culturally oriented population. The location within a city is also important — a gallery should be on or near a main intersection and should have a display window on the street. You should avoid all second story locations or being around a corner. Often a distance of just half a block makes all the difference in traffic flow patterns.

ROLE OF A GALLERY: A gallery such as ours serves a dual purpose—it exposes the craftsperson to the public and to other craftspersons, and it exposes the public to contemporary crafts—to the attitudes and concerns that a craftsperson lives with on a day-to-day basis. Our idea has always been to show jewelry and metalsmithing that is well-designed and of the highest quality in a setting that is comfortable and inviting.

But craft objects, no matter how exciting they are to other craftspersons, have to be explained — even to people who are interested. Often a person will walk in and out of mild curiosity not knowing how to respond or relate to what he sees. A sincere and helpful salesperson must initiate contact and take the time and energy to make the customer comfortable. At this point a sales person can begin to educate the customer and convey excitement for the objects. This is a demanding role day after day, but a necessary one if a gallery is to be successful. There are many people interested in learning about contemporary crafts and we now have established a clientele that visits our shop on a regular basis.

I would like to carry this theme a little further and point out that one of the main roles we have found ourselves in is that of being an educational resource. Many people are intimidated at first by imaginative and unusual jewelry. To the American public imagination is something that is mysterious and intangible—they have not been encouraged to develop it in school and after school there are few situations where a person can use their imaginations. Television and other mass media tend to level taste to mediocrity. People need imagination and galleries such as ours provide an environment where an interested person can simply walk in off the street and engage one of the sales persons in a lengthy discussion about contemporary metalsmithing. You cannot receive this personal attention by visiting a museum exhibition and even interested persons are not prone to reading specialized

books. The craft activities that occur within a university are usually isolated from the surrounding community. Therefore, galleries such as ours, with sincere and helpful attitudes, play a major role in boradening the public's awareness and appreciation of contemporary crafts.

FUTURE: This fairly well explains the arrangement and daily operation of our studio in Carmel Valley and the gallery in Carmel. I have traced my own background and development and explained the attitudes and concerns that all of us feel as a group. The future offers several possibilities. Recently I spoke with an attorney in San Francisco about incorporating as a non-profit organization. We are envisioning a situation where the studio would be much larger and classes and workshops would take place on a regular basis. By becoming a foundation we would receive some tax benefits, we would qualify for many grants and be eligible for tax-deductible donations from many sources both private and public. But we have decided to shelve this idea for a few years. We have worked so hard creating what we have that we feel we should take advantage of our studio and gallery and concentrate on enjoying and improving our work. For the time being we hope to continue to grow and to establish our gallery as an important focal point of contemporary metalsmithing, and our studio as one that will produce important and original work. I would like to invite any of you to visit us any time you are in the area; we would be glad to give you a tour and answer any questions you might have.

EXHIBITING IN GERMANY

by Lolly Frankel

In Germany there are museums and galleries that exhibit only jewelry. The Schmuck Museum (jewelry museum) in Pforzheim has a permanent exhibit of contemporary commercial jewelry and various exhibitions of historical work, contemporary handmade pieces and juried shows. The Goldschmiedhaus in Hanou also has regular exhibitions of metalwork in addition to its permanent collection.

There are five or six galleries in Germany that show and sell only metalwork. A few of the known ones are Map in Cologne, Lalique in Gerlin and Galerie Orfevre in Dusseldorf.

Orfevre is a small gallery: twenty square meters of space in the Ko Centre on the Konigsallee, one of Germany's famous streets where the wealthy go to see and be seen. Orfevre grew slowly out of a cooperative effort by independent goldsmiths to establish a gallery exhibiting hand made jewelry of good design and high quality crafrsmanship. The gallery is now owned by two of the original group of goldsmiths, Peter and Maria Hassenpflug. They exhibit the work of a wide variety of gold- and silversmiths, not only German, but any work of high quality, original concept and personal design. The Hassenpflugs are also goldsmiths and operate their own workshop in collaboration with the gallery.

The gallery has two large show windows, one is called "the artist window" and every month a different jeweler/artist's work is featured. The other window is composed of small units, each containing the work of an individual craftsman, which together display the work of the various people whose jewelry is sold in the gallery. Inside, the unit principle of the "mixed artist's window" is repeated, thereby giving each person's work individual attention and offering the clientele an overall view.

From time to time the gallery is completely taken over to exhibit the work of one individual. These exhibitions are paid for by the gallery, and invitations are sent to their clientele. All pieces are displayed on commission and Orfevre receives one third of the selling price of the piece.

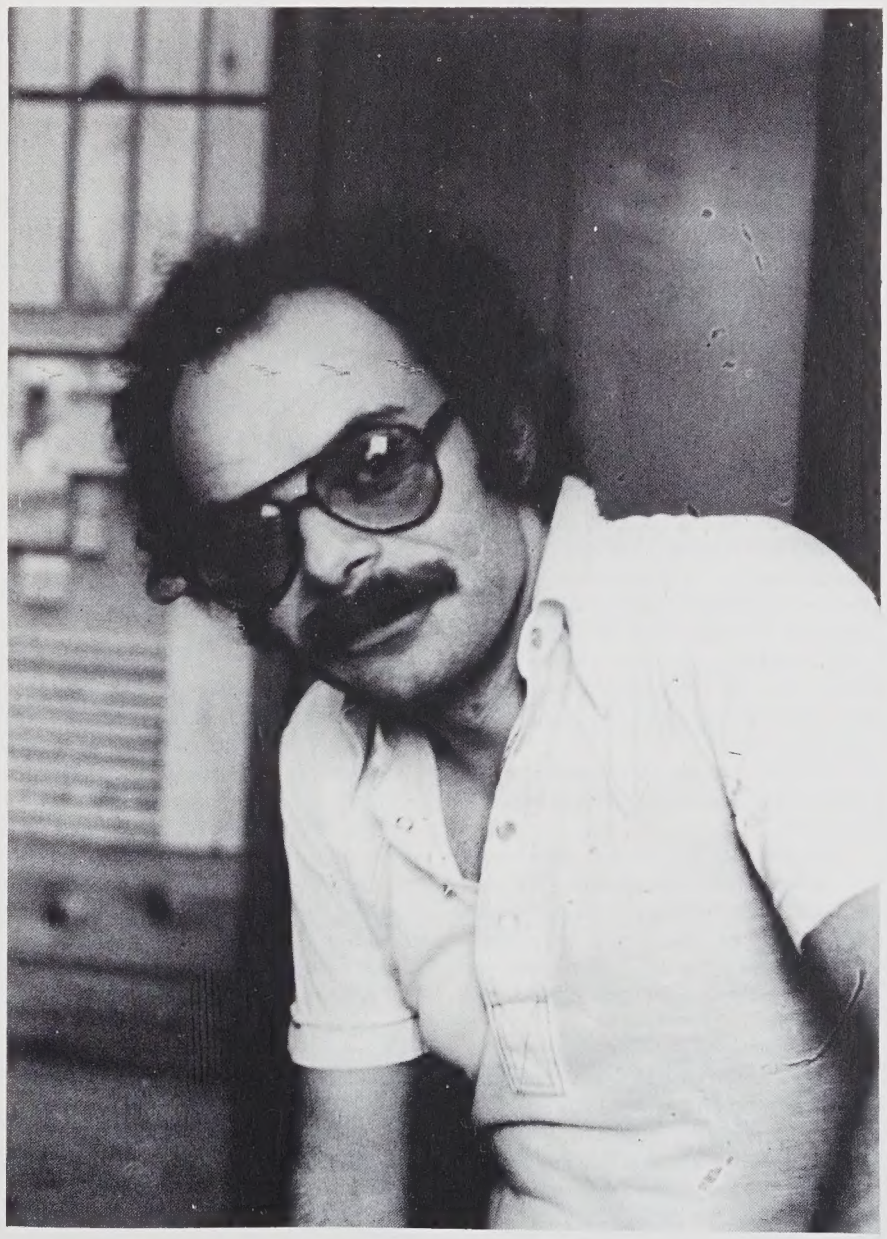
CONVERSATIONS WITH STANLEY LECHTZIN PART 2

by Mark Baldridge

(Editor's Note: Stanley Lechtzin was interviewed during a workshop he conducted at Longwood. Our conversation was spontaneous and unrehearsed.)

MARK: I'd like to center this conversation around the controversy between American and European work quality and design level — whom do you feel is ahead?

STAN: It's difficult to say anything more than we're different. When you begin to analyze things in terms of better or more advanced, you start assuming certain values and the values of European-trained goldsmiths aren't ours, just as ours aren't theirs. I personally find the best European work to be very exciting, stimulating and informative. I'm not sure the Europeans, in general, feel the same way about what we're doing, but here my prejudices interfere. I'm suggesting the Europeans are a bit more close-minded than we are, perhaps an unfair generalization as I know and have some very good friends who were trained and are working in Europe today. They are as inquisitive, open-minded, bright and vital as anyone you might find in this country, and I must acknow-



Stanley Lechtzin (right)

ledge our share of narrow-minded individuals. I think the Europeans establishment is a bit more narrow in its outlook than the establishment here — unless we want to look at the jewelry industry, and I think that may be the real area of comparison.

The jewelry industry in many European countries is much closer to the activities of the artistically oriented producer of jewelry than our own industry is to us, so the industrial establishment in the European countries tends to be more open to new design. Our industry is virtually closed to fresh design approaches and so the issue of whether or not to open up to innovation rests undebated. The work promoted by the European establishment therefore tends to be fresher than what is promoted here. To sum up, I would not be able to place any sort of value judgement on what is ahead — who is behind — who is doing better work — or more exciting work — because I think a lot of it has to do with your own particular interests.

MARK: Let me be specific then. Do you feel that European craftsmanship in general is superior to American craftsmanship?

STAN: Traditional European craftsmanship would be by and large superior to our imitation of that tradition — yes. But we are engaged in activities outside the traditions developed in Europe and our utilization of what we are involved in technically is far superior to what you will encounter in European approaches along the same lines. In other words, what we do, we do better than anybody else, and vise versa.

MARK: Do you feel their level of design in various categories is superior to ours?

STAN: No — although their level of design is more acceptable to their industrial establishment than our level is to ours. For this reason, they might come to the conclusion that their design is better, but I don't think that is accurate.

MARK: It's been said that the average European consumer is more sophisticated and aware of jewelry design than his American counterpart — do you feel this is true?

STAN: Not from my experience and I've traveled extensively in Europe. I've seen what goes on and I would say there is a sophisticated MINORITY, who would have you believe they are more than a minority, however, the true issue lies in the fact that the industry and the artisan are more closely allied in Europe, so their general design level of industrial production is somewhat higher. In other words, the consumer doesn't have as much choice, so trying to exercise bad taste is more difficult, although that bad taste still exists.

MARK: Do you think American manufacturers could benefit by looking at the European mode of production and working more closely with our craftsmen?

STAN: Well — when I first began making jewelry, I thought it would be grand if the jewelry industry "saw the light" so to speak and began producing stuff as fine as what I was doing, or rings, like Lutson was making. Then ten to twenty years later, I find manufacturers of rings are beginning to produce items similar to those I was designing in the late 50's and early 60's, and it suddenly no longer satisfies me. The concept of good design has changed for me and now I'm more interested in the ability of the artist to talk about his own involvement and problems he sets for himself. The very fact of producing in quantity changes the original concept — it loses the personal imprint of the artist and becomes something else, falling into the category of industrial design.

MARK: Can I assume from these statements then that you are a proponent of one-of-a-kind jewelry?

STAN: For me, yes. In many cases, what works well as a unique object doesn't function as well when produced in quantity. It takes a different type of thinking and motivation.

MARK: Do you think the average jewelry craftsperson here in the United States could earn a living solely from one-of-a-kind production?

STAN: Most people could not, I would say without qualification. The market for unique pieces is very, very limited — and the more unique they are, the more demanding they are, which in turn increases the likelihood they will NOT be economically viable.

MARK: It looks like your street took a two-way split!

STAN: Unfortunately — yes. That is the double twist we are all fighting today. The most successful individual will probably travel both. It is possible to look at the mass market, analyze its requirements and then do your best to satisfy it, while still retaining your own ideas and pursuing them simultaneously for other purposes.

MARK: Considering the American educational system and the current, ever-tightening job market, do you feel the majority of craft students are properly prepared by our schools to find employment opportunities after graduation?

STAN: I'm not sure that the schools have an obligation to guarantee employment after graduation, but I think we should address the issue of economic survival and by and large, we are not really doing that now. For many years our main impetus has been to cultivate the artistically outstanding graduate student toward employment in our colleges and universities, but now that these opportunities have shrunken to an almost non-existent point, we have been remiss in our responsibilities. We need to clarify this with our students before they complete their graduate work. I see the MFA as having little value beyond the credentials it provides for college teaching. I know many people will disagree with this statement, but I believe I can back it up with a logical argument.

MARK: Okay, Stan — I guess you know my next question: what is your logical argument?

STAN: To address the issue quickly, I would ask you to suggest any other activity an MFA holder could engage in that could not also be engaged in without an MFA. We need to develop a curriculum at the undergraduate level capable of helping students assume self-sufficiency as practicing artists or responsible positions in the jewelry and metal-working industry. We have not actively addressed this issue and I think it's something we must pay more attention to.

MARK: Do you have any proposals concerning this?

STAN: As a matter of fact, I am engaged in planning a meeting with industry spokesmen to discuss this matter, but I feel it's a little premature to elaborate on now. I do think Peter Gainsbury's analysis of what has occurred in this country is accurate (I'm referring to the Letters to the Editor column in the Goldsmiths Journal); however, his conclusion is not one I would subscribe to. I don't believe the answer lies in pulling crafts training out of our art departments. We can retain our position as artists and faculty members and still help our students progress technically and aesthetically to the point they can earn a living at what they do. For example, the departments of graphic design and illustration now in existence at many art schools prepare their students for commercial design. These courses are well attended and the students are prepared to make a living as artists. I feel we in our metals departments can take a similar approach. We can still promote aesthetic goals while we are addressing the design and technical considerations demanded of industry. Hopefully, we will soon experience positive dialogue between the schools and industry which will open up new channels for our students and encourage their future development.

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HELPFUL HINTS
by Alan Revere

1. Using binding wire can be tricky. For best results, use fine anneated binding wire (0.3 mm) in jewelry work. Always twist 2 pieces together for added strength and tightening ability without breaking. Also use flat pliers to tighten onto work, leaving about 10 mm between work and tightening pliers. This allows slow and even tightening.
2. When using spindles to wrap jump rings for links, etc., you may run into problems on non-round shapes unless you (a) wrap the spindle with 2 layers of thin tracing paper and (b) after winding on metal, anneal the spindle and wax together; the paper burns off as well, allowing the rings to slip off easily.
3. Kerosene seems to work much better than oil on oilstones for sharpening gravers, drills, etc. It is thinner and easier to see through, also less messy.

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If you know of, or have on your staff, a talented art historian who would like to write metalsmithing/jewelry articles or reviews, please encourage them to do so. Also, please give us their names and addresses and we'll contact them. Thank you!

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